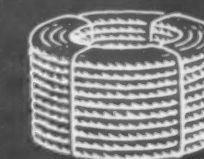
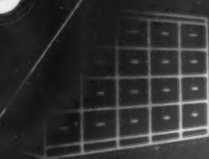
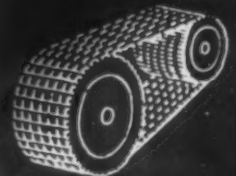
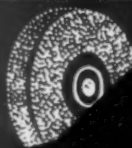


PURCHASING

MAY 1954



PURCHASE FOR PROFIT

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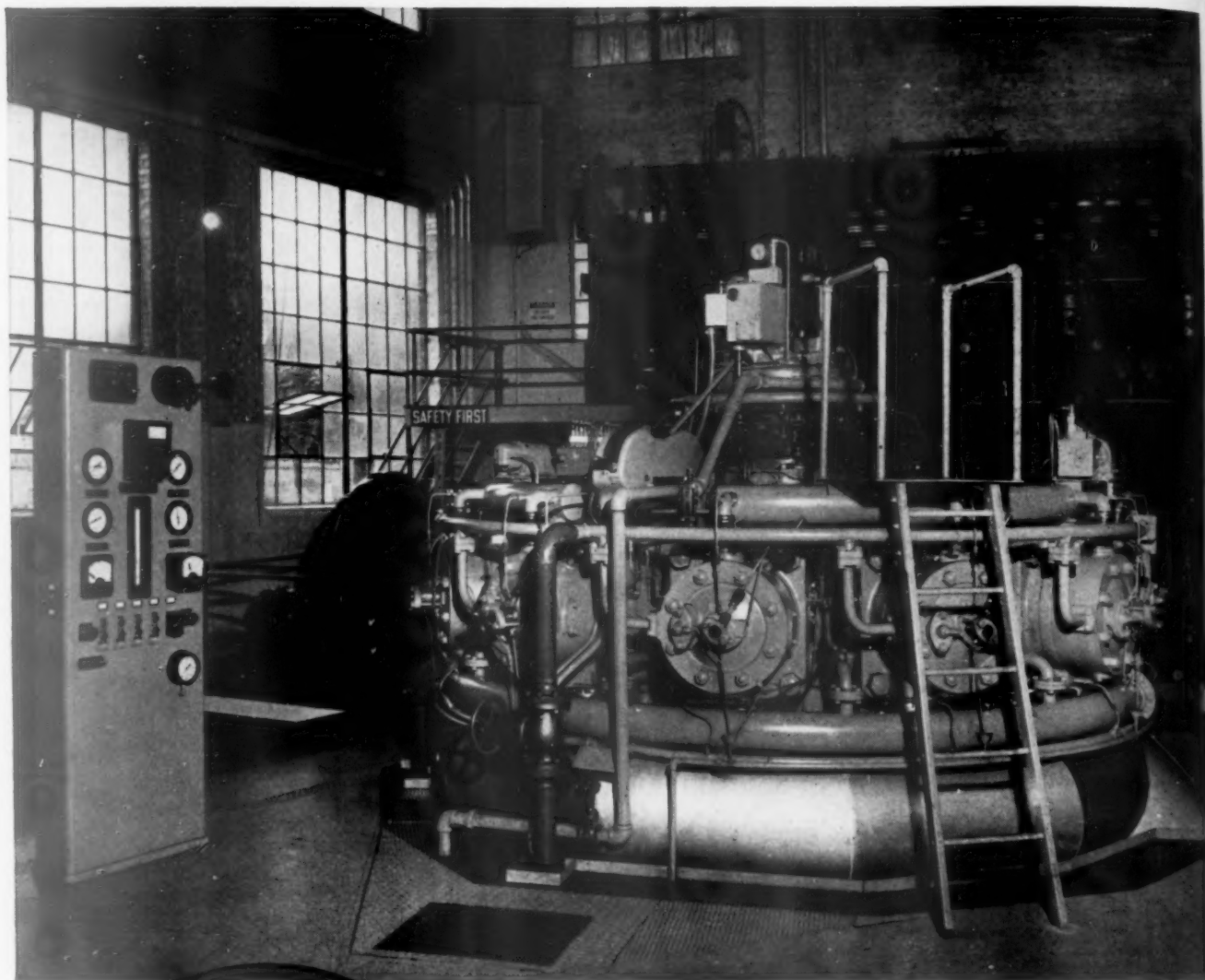
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DIESEL LUBRICATION, for example. More and more power is coming from diesels of all types. Last year alone, approximately 140,000 diesel engines were produced for all types of service, with a total rating of over 18 million horsepower.

It's a tough job to get full power from these engines yet keep maintenance costs and fuel consumption low. But operators everywhere are doing it with the help of effective lubrication — *Texaco*. Take just stationary diesels, for instance —

For over 20 years, more stationary diesel horsepower in the U.S. has been lubricated with Texaco than with any other brand.

Throughout industry, made-for-the-job Texaco Lubricants and skilled Texaco Lubrication Engineering Service are keeping efficiency and production high, costs low.

Put this combination to work in *your* business. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N.Y.



TEXACO Lubricants, Fuels and
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The National Magazine of Industrial Purchasing

VOL. 36, No. 5

MAY, 1954

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914 S. ROBERTSON BLVD.Los Angeles 35, Cal.
998 NATIONAL PRESS BUILDING Washington 25, D.C.

Published monthly by Peasey, Inc.

Subsidiary of

CONOVER-MAST PUBLICATIONS, INC.

Printed at Orange, Conn.

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PURCHASING is an independent journal, not the official organ of any association. Established 1915 as "The Purchasing Agent". Consolidated with "The Executive Purchaser".

Contents are indexed monthly and annually by the Engineering Index Service.

Subscription rates: United States, U. S. Possessions, and Canada: \$4 per year; elsewhere, \$10 per year. Single copies, \$1.00.



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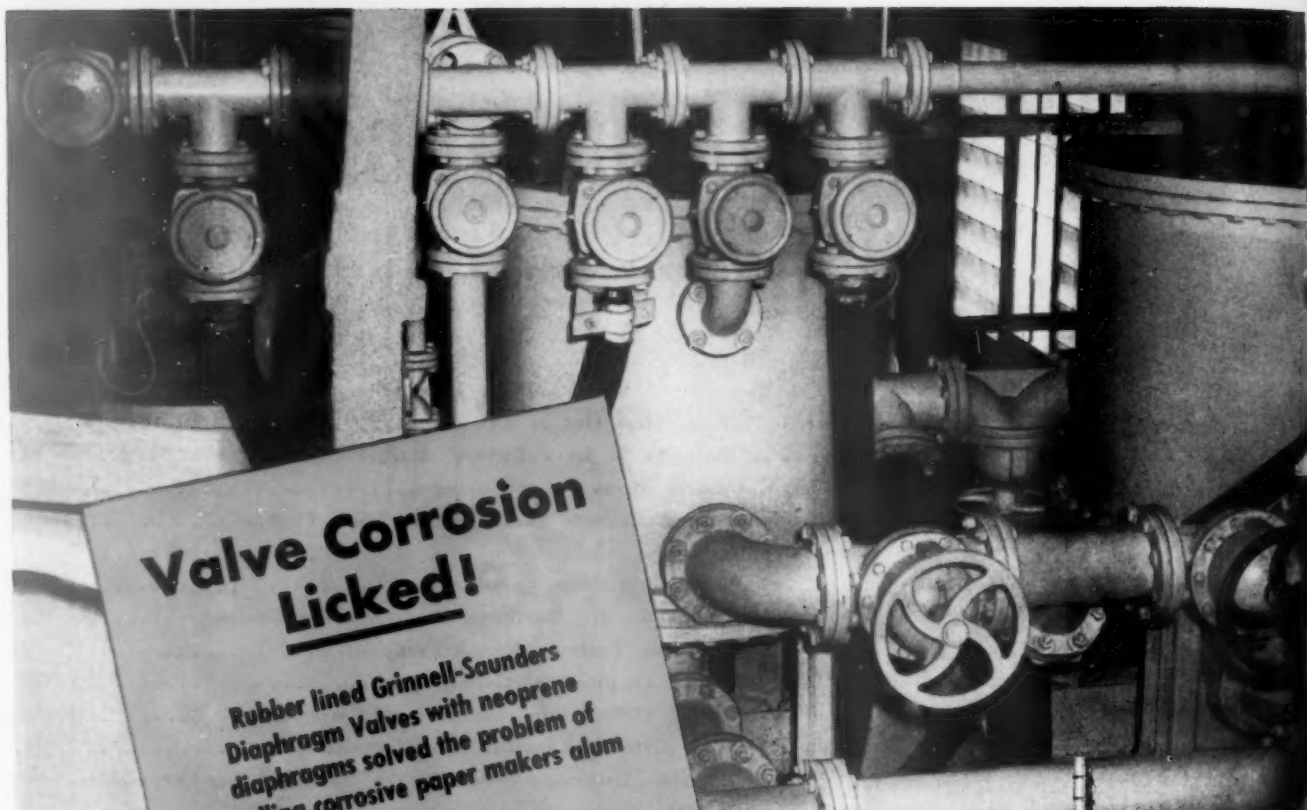
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**Valve Corrosion
Licked!**

Rubber lined Grinnell-Saunders
Diaphragm Valves with neoprene
diaphragms solved the problem of
handling corrosive paper makers alum

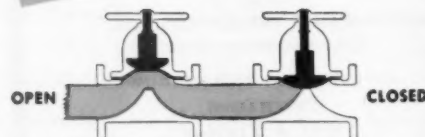
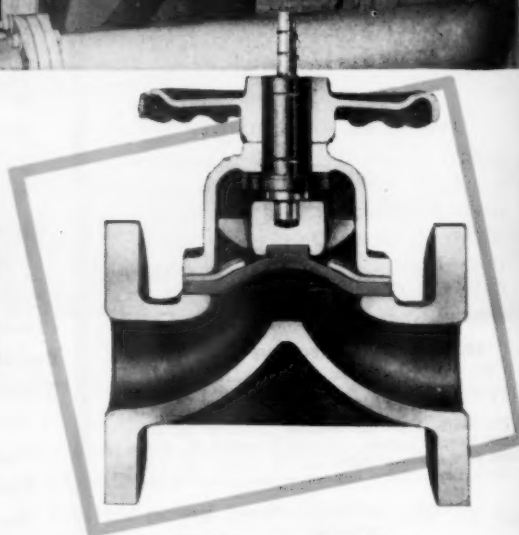
GRINNELL-SAUNDERS DIAPHRAGM VALVES

Commercial aluminum sulphate can be everlastingly troublesome, as anyone knows who has ever had to work with it. So, comparing notes with a company that handles this chemical every day of its business life may be helpful.

Northern Chemical Industries, Searsport, Me., is an important manufacturer of "paper makers alum". Northern Chemical Industries relies heavily on Grinnell-Saunders Diaphragm Valves. They have found that the wide range of body, lining and diaphragm materials available with Grinnell-Saunders valves offers flexibility in handling a wide variety of corrosive fluids.

The basic design of the valve is an advantage. Working parts are completely isolated from the fluid stream which, in the case of corrosive acids, means longer valve life. Also, there is the matter of economy. With Grinnell-Saunders Diaphragm Valves, it is usually possible to go to less expensive body materials, to which special body linings can be added. Replacement and maintenance expenses, moreover, are greatly reduced.

Originally designed and ideally suited for air and water service, Grinnell-Saunders Diaphragm Valves also are recommended for almost every regular or special service. This is backed up by the excellent performance records achieved by valves now in use.



Features of Grinnell-Saunders Diaphragm Valve:

- Diaphragm absolutely isolates working parts from fluid
- Diaphragm lifts high for streamline flow in either direction
- Diaphragm presses tight for positive closure
- Body, lining and diaphragm materials to suit service
- Simple maintenance — diaphragm easily replaced without removing valve from line

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industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

For More Information Circle No. 408 on Inquiry Card—Page 17

PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

May 1, 1954.

ANOTHER SNIP AT RED TAPE

Dip in production rate and the level of employment tends to obscure the fact that a large tonnage of materials is still going into defense and atomic energy uses.

So much so that the Government is still operating a materials priorities system. Latest development in priorities has been a scaling down of the paper work involved in the Defense Materials System.

DMS is essentially a priorities system, giving rated orders a preference on delivery of steel, copper and aluminum. Along with the simple priorities aspects of this system, there are some accountability features—the so-called allotment system, which is a hangover from CMP.

* * *

CONTROLS AS AN EXACT SCIENCE

Materials controls are based on the three basic metals—steel, copper and aluminum. Thinking during an emergency period is that the whole economy is paced by the rate of demand for the basic metals. When demand is close to total capacity to produce, some type of system is needed to assure a reasonable distribution of materials.

As demand exceeds supply, it becomes necessary to tighten up on the degree of control. It has almost become an exact science.

It is known that in a tight supply market, regulations ruling out deluxe features in consumer hard goods will save a specific tonnage of materials. It is known that the stockpile of consumer goods includes manufacturer stocks, distributor stocks, and stocks on the retailers' floor. In addition, there is a large national stockpile in the hands of the consumer.

All this means is that on the way into a control program, there is a definite and almost mechanical process of tightening up. Also, on the way out of controls, there is a definite system of taking off the pressure. You drop certain classes of users from direct control. You drop end use control—also end use accountability.

* * *

SELLERS SCOURING THE MARKET

In terms of overall materials supply, the day of justified control is long over. With sellers out scouring the market place for buyers, even the suggestion of use control seems far-fetched.

Why have controls at all, when there is a surplus?

Only excuse now is the fact that military tension still remains. The war in Korea is barely over, and the aftermath of that war has not been at all reassuring.

There is now a strong effort to keep our military machine in readiness, and industry is a major part of our defense machine.

* * *

BILL OF MATERIALS STILL NEEDED

Consequently, the effort is to keep as much control machinery in operation as industry will tolerate—to keep information coming in to Government on how much material is being used for defense—to keep as far as possible a system under



What's wrong with it this time?

"It" is a valve that was supposed to cut costs. That it did, but first cost only. Beyond, it gave no assurance of quality or dependability. Result: The price tag saving was wiped out many times over by repeated maintenance at today's high labor rates.

That's an important matter with thrifty buyers of piping equipment. They want greater assurance of quality—not fictitious savings. They know it's the only way for a plant to stay within maintenance and operating budgets.

That's why thrifty buyers are insisting on the traditionally better quality of Crane valves and fittings—quality that means longer life and greater freedom from repairs. What's more, Crane puts such quality into piping equipment for every industry's needs.

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CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

For More Information Circle No. 414 on Inquiry Card—Page 17

▲PURCHASING PREVIEWS

continued

which there is a known and an exact bill of materials on the important items of military hardware.

New development in DMS is to keep a CMP type of reporting system for the prime contractors of military equipment—the airframe builders, the manufacturers of tanks, guided missiles, guns, etc. . . . also to keep the producers of major component parts under the obligation to report their rate of materials use.

* * *

INVOLVED RECORD-KEEPING DROPPED

Below the prime level, below the level of major components, the system of accounting for materials use has been dropped. . . . No bill of materials on the myriad parts and supplies going into military hard goods.

This will lift reporting requirements from the bulk of manufacturers selling parts and supplies to a military prime contractor. These producers will still be able to rate their orders and will still be able to get a priority—but will not have to keep involved records.

* * *

NOBODY LIKES PAPERWORK

In a period of overall surplus of materials, there is sharp impatience with any control procedure—especially where paperwork is involved.

How long these less noxious controls will be continued depends on how long quantity production of military hardware continues.

For the present and for the foreseeable future, defense will continue to call for mass production of equipment and weapons—many of a new and unusual nature. For these, an exact bill of materials is certainly needed.

* * *

SWEEP SURPLUSES UNDER THE CARPET

Administration spokesmen maintain that one of the prime efforts will be to get the Government out of business.

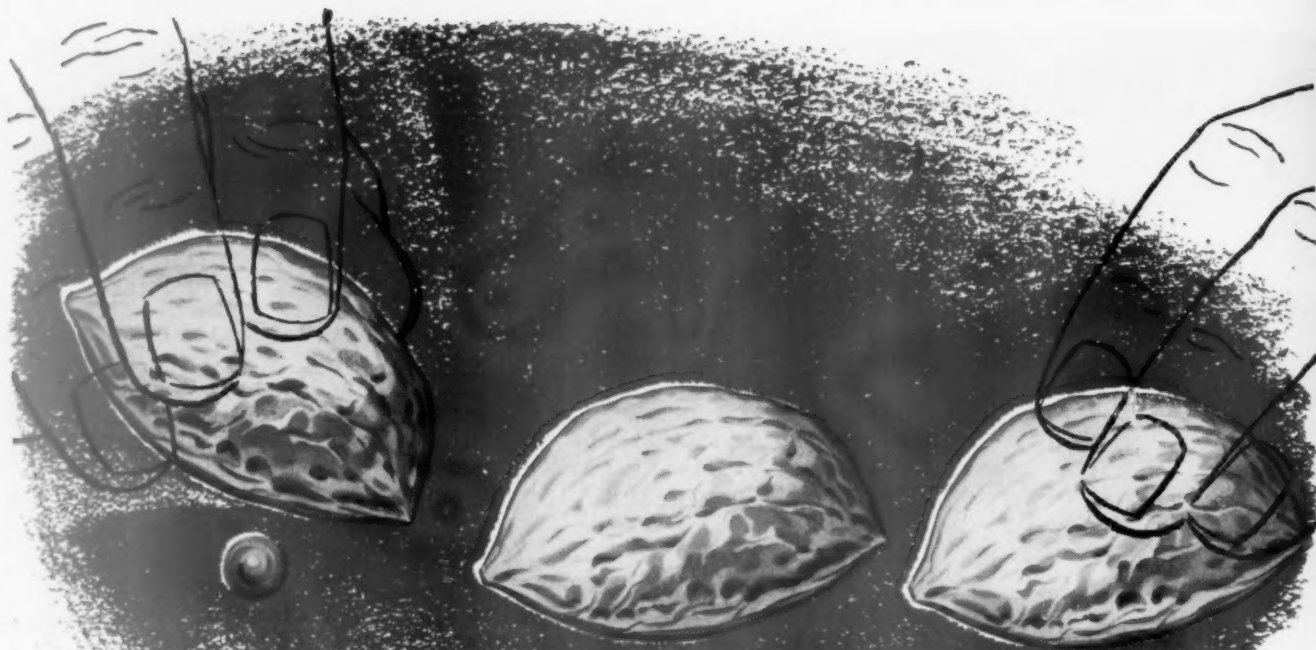
In this connection, one of the more vexing problems is the fact that the Government now owns roughly one out of every five machine tools in the country. The formula used to remove Government from business—merely turning Government ownership or operation over to private interests on a fair and equitable basis—does not, however, apply to machine tools, or to surplus materials in general.

The Government has tried sale of surplus, gifting of surplus and destruction of surplus. In past periods, where large surpluses developed, the Government has even swept them into some convenient warehouse and tried to forget them.

Fact is that none of these efforts has been economically sound, nor politically wise. Once more the problem is here, and the best likelihood is that a combination of devices will be used in disposal. Some will be sold, some will be scrapped, some given away, some forgotten—or at least conveniently overlooked.

But whatever method is used, the process is sure to be stormy.

Another certainty is that surplus disposal will be no less a headache to the P.A. than to the Government.



THEY MAY LOOK ALIKE

...but there's a big difference underneath

And it's the same way in buying carbon or alloy steel tubing. Lots of it looks very much like OSTUCO ... but underneath it all there are these advantages that save you money:

OSTUCO provides a single source service ... complete manufacturing, fabricating and forging operations under one roof mean one purchase order takes care of all details. And you can depend on deliveries as promised. OSTUCO'S flexibility assures the same efficiency and economy in both large or small production runs. OSTUCO'S quality control maintains uniformity of structure from raw materials to finished product.

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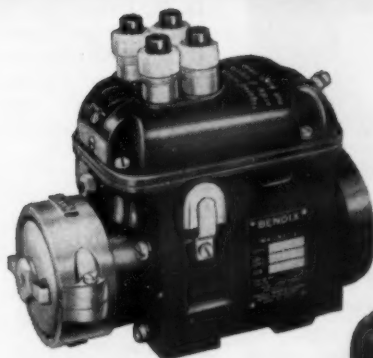


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Detailed information available on request.

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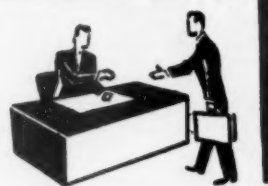
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For More Information Circle No. 417 on Inquiry Card—Page 17

NEWS OF YOUR Suppliers



R. F. Allen is now assistant to the executive vice president of **H. K. Porter Co., Inc., Pittsburgh.**



Dogan H. Arthur

Dogan H. Arthur has been appointed assistant aircraft sales manager by **Aeroquip Corporation, Jackson, Mich.**

Kenneth W. Montfort is now district sales manager in the Pacific Northwest for the Agricultural Chemicals Department, **Eston Chemicals Division, American Potash & Chemical Corp., New York City.** He will direct activities in Oregon, Washington, Idaho, Montana and the Province of British Columbia.

Four new appointments have been announced in the Chlorinated Products Division of **Diamond Alkali Co., Cleveland.** Dr. D. J. Porter, formerly assistant to the director of research, becomes assistant general manager and research director. W. B. Beeson, Jr., former sales manager of Diamond's subsidiary, **Belle Alkali Co.,** is now product sales manager for Diamond chemicals manufactured at the Belle plant as well as the company's other chlorinated products, including perchlorethylene, carbon tetrachloride and hydrochloric acid. In addition, W. J. Esselstyn is the sales manager for solvents and M. T. Walsh takes over the same duties for Chlorowax and related products.

H. L. Hoffman & Co., Westbury, Long Island, has been appointed as sales representatives for the **Atomic Instrument Co., Cambridge, Mass.** They will cover New England, New York, New Jersey and eastern Pennsylvania.

A number of changes have been announced in the general staff organization of the Industrial Division of the **Armstrong Cork Co., Lancaster, Pa.** D. P. Paiste has been made assistant general sales manager of the division; C. T. Potts becomes manager of Felt and Fibrous Products Department; and D. M. Smith succeeds Mr. Potts as manager of the Shoe Products Department.

Pittsburgh Screw and Bolt Corp., Pittsburgh, has appointed Charles M. Sutlive as manager of sales of its



C. M. Sutlive



A. B. Comstock, Jr.

Philadelphia district. At the same time it was announced that A. Barr Comstock, Jr., has been made general manager of sales with headquarters in Pittsburgh.

Magnethermic Corporation, Youngstown, Ohio, has named two new sales representatives. Fred I. Johnson Company, Elmhurst, Ill., will represent the company in northern Illinois, lower Wisconsin, and northern Indiana. Parker Sales & Engineering Co., Minneapolis, will cover northern Wisconsin, Minnesota, northern Iowa and the Dakotas.

The Chase Bag Co., Chicago, has appointed Donald W. Douglas as a salesman for the Stockton, Calif., area and the state of Nevada.

Donald E. Thal has been named central general manager for the Pacific Division, **Link-Belt Co., Chicago,** with



Donald E. Thal

headquarters at the firm's San Francisco plant.

Durkee-Atwood Co., Minneapolis, Minn., has named the following companies as exclusive distributors of their V-belts; **Carolina Rubber Supply Co., Greensboro, N. C.; Carolina Belting Co., Greenville, S. C.; Roanoke Belting & Rubber Co., Roanoke, Va.; Western Industrial Supply Co., Sacramento, Calif.; Hunter Electric Motor Service, Columbus, Ga.; Precision Gear & Machinery Co., Charlotte, N. C.; Bearing & Transmission Products Co., Eureka, Calif.; and Montezuma Bearing Co., Albuquerque, N. M.**

Hubbell Metals Inc., St. Louis, Mo., has been appointed a distributor for **Kaiser Aluminum & Chemical Sales, Inc., Oakland, Calif.** They will cover the St. Louis, Kansas City and Indianapolis areas.

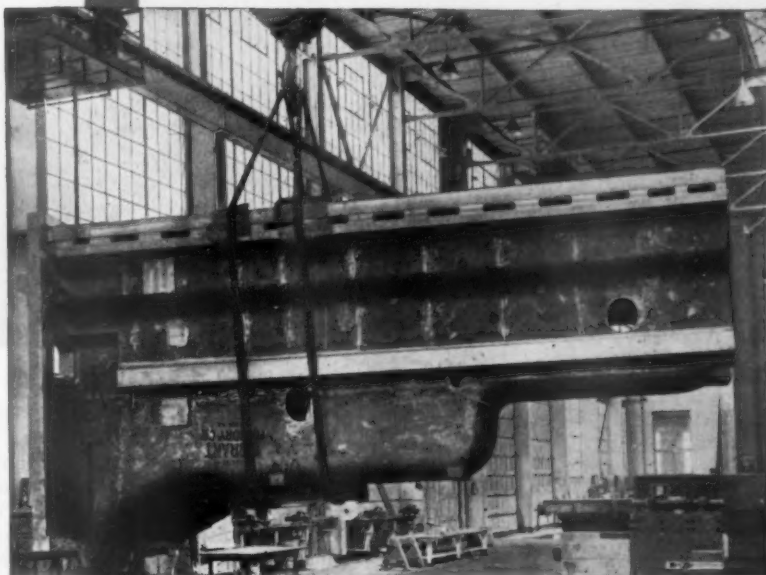
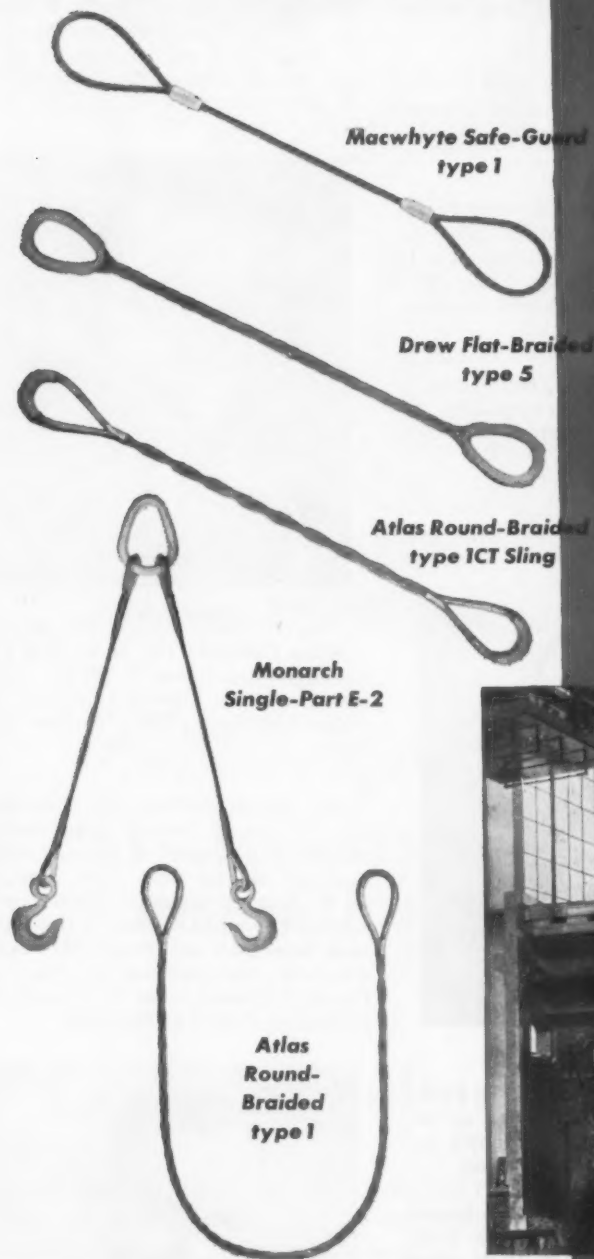
George Ballee and Jonathan Meyer have been appointed as sales representatives for **Hardware Sales Corp., Flushing, N. Y.** Mr. Ballee will work in Illinois and southern Wisconsin and Mr. Meyer will cover central and northern California.

Macwhyte Slings any type . . . any size your job requires

Here are some of the hundreds of slings available to you. Macwhyte slings cover a full range of sizes and designs in three body types: round-braided, flat-braided, single-part. These slings are made to order with fittings needed.

For greater flexibility, safer gripping, and longer sling life, Macwhyte *Atlas* Slings are "balanced-braided" and (1) Ropes are spliced endless before braiding. (2) Right lay ropes balance left lay ropes. (3) All ropes follow uniform spiral paths, assuring balanced tension throughout the sling body. And under load, there's no kinking . . . no spinning in an *Atlas* Braided Sling.

Macwhyte engineers will study your sling needs and give you the benefit of their broad experience. Ask for recommendations and quotations.



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Slings, Aircraft Cable, Safe-Lock Assemblies,
Monel Metal and Stainless Steel Wire Rope.

1053-B

For More Information Circle No. 418 on Inquiry Card—Page 17

The **Lincoln Electric Company**, Cleveland, has added three men to its field staff of application engineers. Jack Jaso takes over the Chicago district; Walter Rockway the Cincinnati district and Chester Shira will handle the Jacksonville, Florida, area.



Russell W. Bill

Russell W. Bill is now sales manager of the Shakeproof Division of **Illinois Tool Works**, Chicago.

Cyberno Products Co., New York City, has been named a representative for the Conoflow Corp., Philadelphia. Cyberno will handle Cono Controls in metropolitan New York, northern New Jersey and Connecticut.

Robert W. Ray has been named general manager of the **Ward Heater Co.**, Los Angeles.



Albert A. Holly

The **Campbell Chain Co.**, York, Pa., has named Albert A. Holly as general sales manager.

The **Hydraulic Press Manufacturing Co.**, Mount Gilead, Ohio, has named two sales engineers. Harry R. Chase has been attached to the district sales office in Pittsburgh and Raymond L. Moreland also goes to the same office.

Gottfred L. Hendrickson has been named sales engineer for Minnesota, North Dakota and South Dakota for the **Udylite Corp.**, Detroit.

Hershner Cross is the new general manager of the Distribution Assemblies Department, **General Electric Co.**, Plainville, Conn.

Joy Manufacturing Co., Pittsburgh, has opened a new district office in Cleveland. Howard E. Butters, formerly district manager in St. Louis, Mo., has been appointed district manager for the new Cleveland site.

Howard Roberts has been named a technical and sales representative for the **Truarc Division**, **Waldes Kohinoor, Inc.**, Long Island City, N. Y.

George Doll has joined the sales staff of the **U. S. Expansion Bolt Co.**, York, Pa.



D. A. Clark

Bemis Bro. Bag Company, St. Louis, Mo., has named D. A. Clarke as assistant manager of the company's Indianapolis plant and sales division.

Two industrial sales appointments have been announced by the paint division of the **Pittsburgh Plate Glass Co.**, Pittsburgh. William T. Carey was named director of sales, petroleum and transportation finishes, and John A. Burke, Jr., assistant director of sales.

The **Continental Can Company**, New York City, has named John E. E. Griffin as sales manager of its Overseas Division.

Two administrative appointments have been announced by the Lock and Hardware Division of **Yale & Towne Manufacturing Co.**, Stamford, Conn. J. Kenneth Sloan is now manager of pump sales and Joseph E. Parsons has been appointed assistant manager.

Lamson Corporation, Syracuse, N. Y., has named W. G. Lanterman as Cleveland regional manager. He will head the Cleveland, Cincinnati, Pittsburgh, Indianapolis and Detroit districts.

The **Metal Processing Department**, **Pennsylvania Salt Manufacturing Co.**, Philadelphia, named Charles R. Sorber, Jr., as Cincinnati district supervisor. He supervises sales activities in the Indianapolis-Louisville, Columbus and St. Louis territories.



Cyrus E. Silling

Witco Chemical Co., New York City, has appointed Cyrus E. Silling, Jr., as manager of its Plastics Chemicals Division with headquarters in New York City.

The **Upson-Walton Co.**, Cleveland, has announced several appointments. Raymond J. Considine is now district manager of the New York area and H. B. Korman becomes district manager at Cleveland. Added to the Cleveland sales staff are Frank M. Pratley, who will cover northeastern Ohio, and Frank J. Samsel, who will handle the northcentral part of the state.



Carl L. Gosewehr

The **Oilgear Co.**, Milwaukee, Wis., has named Carl L. Gosewehr as Pacific Southwest representative. He will headquarter at the company's Los Angeles office.

Additional News of Your Suppliers
will be found following the
Industrial Development section



"Featherweight"®

**85% MAGNESIA
INSULATION**

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helps refinery conserve dollars

"Save heat—save money" is an operating rule that holds true for almost every industry. In the refinery illustrated here, heat is effectively conserved by the use of "Featherweight" 85% Magnesia, used to insulate various pieces of hot piping and equipment.

For any industrial insulation use, "Featherweight" proves to be a thrifty choice. By itself this material (85% basic carbonate of magnesia and asbestos fiber) has an effective insulating range up to 600°F. Used with K&M Hy-Temp Insulation, its range is extended to 1900°F.

Hy-Temp is applied directly to the hot surface, and "Featherweight" is used as the second layer. The two

materials, when applied with staggered vertical and horizontal joints, eliminate heat loss which occurs on single layer installations when the expansion of hot piping and equipment causes joints to open.

These K&M insulations will last the life of the equipment they serve, will withstand moisture, vibration, and frequent temperature change. With a waterproof jacket, they serve equally well outdoors. Both materials are supplied in various sizes and thicknesses.

Your K&M distributor is an experienced applicator who will gladly give you more information about these heat-saving, money-saving K&M insulations. Or write directly to us.

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

Nature made asbestos... Keasbey & Mattison has made it serve mankind since 1873



For More Information Circle No. 423 on Inquiry Card—Page 17

ULBRICH
Stainless Steels



THIN GAUGE

The **BIGGEST** Little
Converting Mill
in the Country



EDGE ROLLING

Specialists in small
orders—a foot or
a pound and up



SLITTING

STRIP-TUBING -
Flat Wire-Converted
to your exact
requirements

Complete Inventory—
Delivery from Stock



ULBRICH
Stainless Steels
WALLINGFORD • CONN.
Phone: Wallingford 6-7771

For More Information Circle No. 424
on Inquiry Card—Page 17

F.O.B.



FILOSOFY OF BUYING



P.A.—and Friend

Some things can't be purchased—they have to be earned. Recent visitor at PURCHASING's editorial office was Allen M. Adams, Director of Purchasing and Material Control, Bell & Howell Company, Chicago. He happened to have with him that most famous of all awards—the Motion Picture Academy's "Oscar". Mr. Adams' company was awarded one of the 1954 Oscars in recognition of its many technical contributions to motion picture progress. No wonder he was pleased to pose with his distinguished company associate.

CONTRARY to popular belief, purchasing agents are not unanimous in subscribing to the principle that "Whatever it costs, it costs too much." Rather, they are objective judges of value. When the inquiring reporter of the Madison (Wis.) *Capital Times* recently established himself in the Main Post Office and asked a representative group of citizens what they thought of the proposed increase of letter postage to 4¢, P. A. Albert E.

Schwenn sided with the minority who felt that the increase is justified.

HAVE YOU noticed the series of Westinghouse Electric Corporation advertisements currently appearing in *Fortune*? The central theme of their message to this influential reader audience is: "Purchasing is a Profit Making Job."

PURCHASING

SO-CALLED "fair trade" price maintenance laws are proving to be a terrific boomerang for retail merchants, with the rapid growth of discount houses, particularly in "fair trading" areas. The National Retail Dry Goods Assn., which considers such dealers as bootleggers, estimates that sales through these outlets amount to \$10 billion a year, equal to the combined volume of its own 7,000 department, chain, and specialty store members. "In the past," says NRDGA, "the retailer could always cope with the maneuverability of price when there was no such thing as fair trade." But under present circumstances, the future of the retailer depends on (a) strengthening and enforcing or (b) discontinuing "fair trade". Officially, NRDGA supports only the first of these alternatives, but the membership is said to be split right down the middle on the issue.

COPY of the first issue of *Excess*—*The National Journal of Surplus* recently came to our attention, as it has doubtless come to yours. It is a new listing and clearing house service, to aid in disposal and procurement of surplus products and materials, industrial and governmental. We are particularly intrigued by the masthead slogan, "Nothing Succeeds Like Excess."

PURCHASING AGENTS watch their dollars—an occupational trait stemming from long professional habit. It isn't surprising, therefore, that among the winners in a "Lucky Bucks" contest of the Newark (N.J.) *Star-Ledger* there recently appeared the name of Julius R. Vollmer, retired P.A. of American Cyanamid Company. He spotted the lucky serial number on a bill received in change from a local bakery, and claimed the \$25 reward.

THE Pinellas County Purchasing Department, at St. Petersburg, Fla., has a new address. Workmen cut out the cells of the old county jail with acetylene torches and converted the rooms into office space. The building is now known as the Courthouse Annex.

MAY, 1954



"POURING A CHILL"

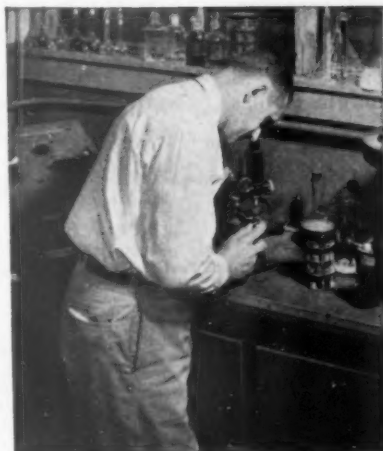
to test Quality of
Gray Iron at Forest City
Foundries

● Are you getting the quality of gray iron you want in your castings? You can depend on Forest City Foundries to meet your exact requirements.

Among the many tests and controls that assure the high quality of Forest City castings are the two illustrated here.

Frequent pourings of small castings known as "chill wafers", as shown above, are made to determine beyond question the quality of iron as it comes from the cupola. Each wafer then is measured for depth of white iron, and control is accomplished by variation of the amount of inoculant. The chart below shows the type of record that is kept, right at the cupola.

CHILL CONTROL SHEET						
Date	8/12/53	Cupola	No. 2	Taken by	R. H. E.	
Time	Temperature	Silicon Additions (Feeder Setting)	Chill 1/32"	Hardness Brinell Bar	Chemical Carbon	Analysis Silicon
7:15	2800	40-50	7	187	3.45	2.25
7:30	2830	40-50	11	207	3.43	2.05
7:45	2750	60-60	9			
8:00	2740	60-60	8	192		
8:15	2740	55-55	8			
8:30	2750	50-50	10	202	3.34	2.15
8:45	2750	50-50	10			
9:00	2750	50-50	17	192		



Control of chemical composition is important to assure uniformity of casting hardness and strength, but modern foundries must also control the structure of the iron as well. Here the metallurgist is examining a polished sample of iron to be sure that the structure conforms to the desired pearlite iron specification. The spectrophotometer at the technician's left is used for many accurate and rapid analyses of alloys every day.

To see how you can profit by having your gray iron castings made by Forest City Foundries, send us sketches, blue prints or samples for quotations.

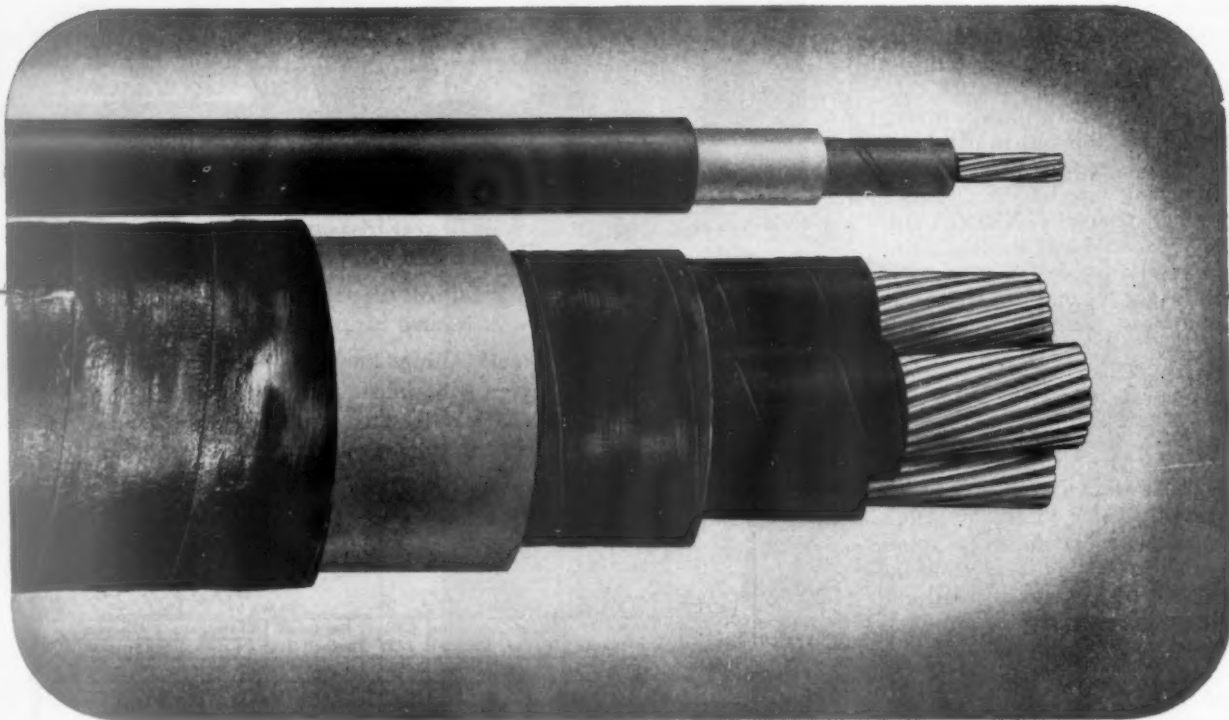
The **FOREST CITY FOUNDRIES** *Company*

2300 WEST 27TH STREET • CLEVELAND 13, OHIO
TELEPHONE TOWER 1-5040

For More Information Circle No. 425 on Inquiry Card—Page 17

ROEBLING PROTECTIVE COVERINGS ON LEAD SHEATHED CABLE

for utilities, chemical plants and the petroleum industry



LEAD SHEATHED CABLES used in certain applications by public and private utilities, chemical plants and the petroleum industry are often impaired by electrolysis or chemical corrosion. But such corrosive action can be effectively reduced, and cable life extended, by using Roebling Paper Insulated and Varnished Cambric Cables with either of two outer protective coverings.

One of these coverings is an extruded thermoplastic sheath employing a special high-molecular weight polyethylene. The other is ROESHEATH,

built up of neoprene and neoprene-filled fabric tapes and vulcanized directly over the lead sheath. Both coverings not only provide essential protection, but, in some cases, may permit the thickness of the lead sheath to be reduced.

For longer, more dependable cable life and worthwhile economy write for full information... and get our recommendations for solving any special problem.

John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

A subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

ATLANTA, 934 AVON AVE. • BOSTON, 51 SLEEPER ST. &
5 PITTSBURGH ST. • CHICAGO, 5525 W. ROOSEVELT RD.
• CINCINNATI, 3253 FREDDONIA AVE. • CLEVELAND, 13225
LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON
ST. • DETROIT, 915 FISHER BLDG. • HOUSTON, 6216
NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR
ST. • NEW YORK, 19 RECTOR ST. • ODESSA, TEXAS,
1920 E. 2ND ST. • PHILADELPHIA, 230
VINE ST. • ROCHESTER, 1 FLINT ST. •
SAN FRANCISCO, 1740 17TH ST. •
SEATTLE, 900 1ST AVE. S. • ST.
LOUIS, 3001 DELMAR BLVD. •
TULSA, 321 N. CHEYENNE
ST. • EXPORT SALES OFFICE,
TRENTON 2, NEW JERSEY



HOW to get the most out of this issue . . .

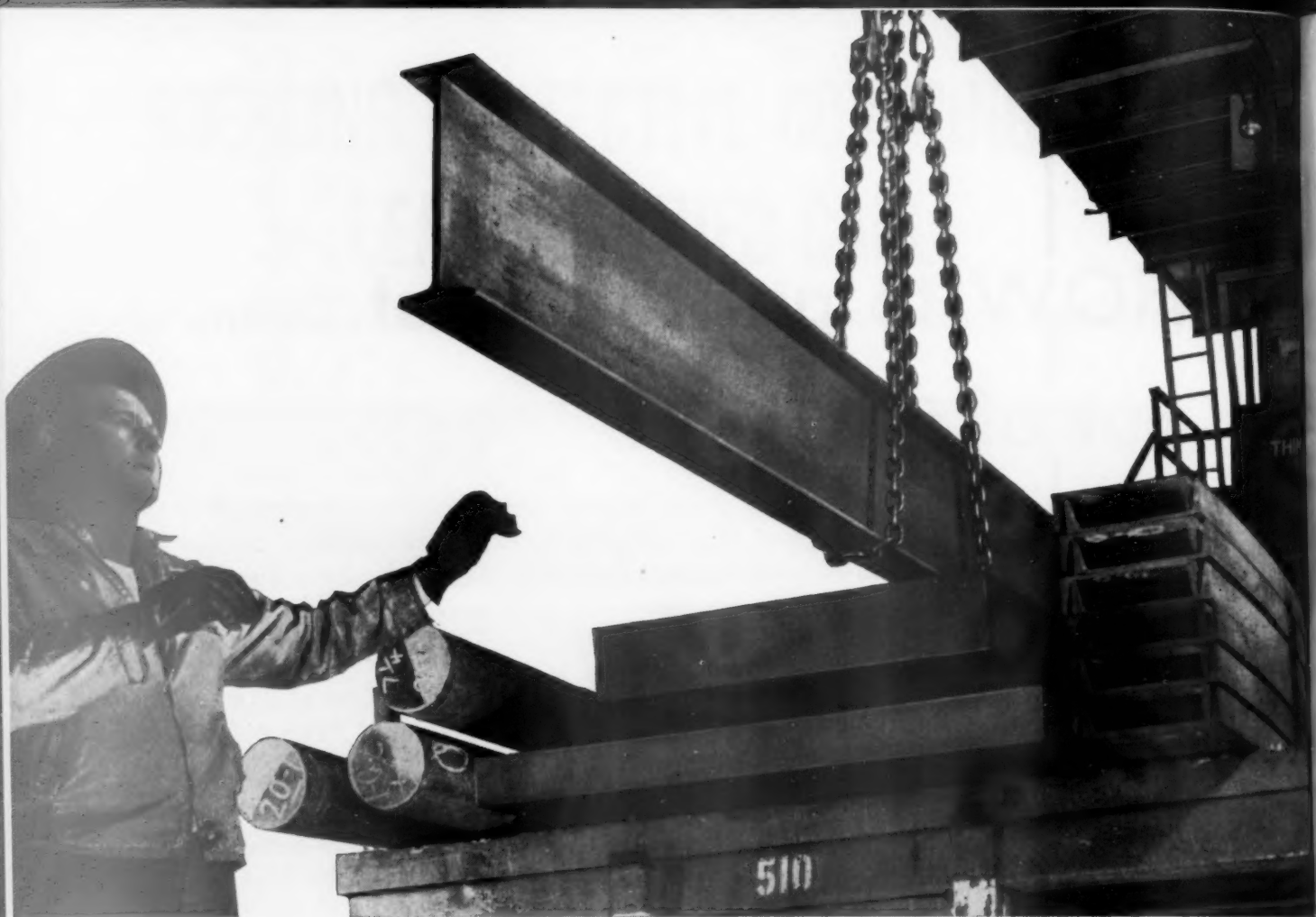
Every page of this "Purchase for Profit" issue of Purchasing has been designed to help you. Here's how to get the greatest advantage from this great store of information:

- **READ** the full length articles on how leading industrial firms are setting up value buying programs in their purchasing departments and the big profit results they have already achieved—
- **CHECK** each of the hundreds of authentic case histories on how various materials, supplies and equipment purchases have cut costs and increased production for companies in all parts of the country. The case histories appear in special sections to highlight your special problems—in production, electrical equipment, product finishing, materials and components, materials handling, packaging and shipping, maintenance, safety, and office equipment—
- **STUDY** the hundreds of advertisements throughout the issue for money-saving ideas, for news of new and improved products. Use them to broaden your sources of supply and thus widen your opportunities for value buying—

THEN

USE the Reader Service Card opposite Page 17 to get more information on any product or service mentioned in this issue. Every case history and every advertisement has a key number, which also appears on the card. Simply circle the card number which corresponds to that following the item or advertisement which interests you and drop it in the mail. No postage is needed. The additional data you want will be sent promptly.

... Keep this issue handy throughout the year! It will serve you well as an idea file and a guide to better buying.



Bars – Shapes – Plates

immediate delivery from world's largest stocks

You get *all* your requirements in *any* quantity when you call Ryerson for bars, shapes and plates. You also get steel of sound, known quality and steel service know-how that makes your job easier.

Need *bars*? Our stocks are the most diversified as well as the largest and every bar is ordered to a definite spec.—even bars often referred to as “mild steel” are quality controlled to AISI spec. C 1015 for best forming and welding qualities consistent with usual tensile requirements.

Need *structurals*? Here you find the most complete selection, including extra-long lengths. And, you can depend on square, practically burr-less friction saw cutting because of our special method of blade alignment and frequent blade changes.

Need *plates*? You get them here up to 10 inches thick. And shops which have had difficulty forming A-7 quality plates will be glad to know that Ryerson now carries plates of forming and welding quality.

The completeness of these stocks enables you to combine all your carbon steel requirements on one order for lower prices under the Ryerson quantity differential plan and for lower freight rates. So, whether you need a single beam or a carload, call Ryerson for immediate delivery from the world's largest stocks.

Principal products: Bars, structurals, plates, sheets, tubing, alloys, stainless, reinforcing, machinery & tools, etc.



RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI • CLEVELAND
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

American Business in 1954 is definitely in

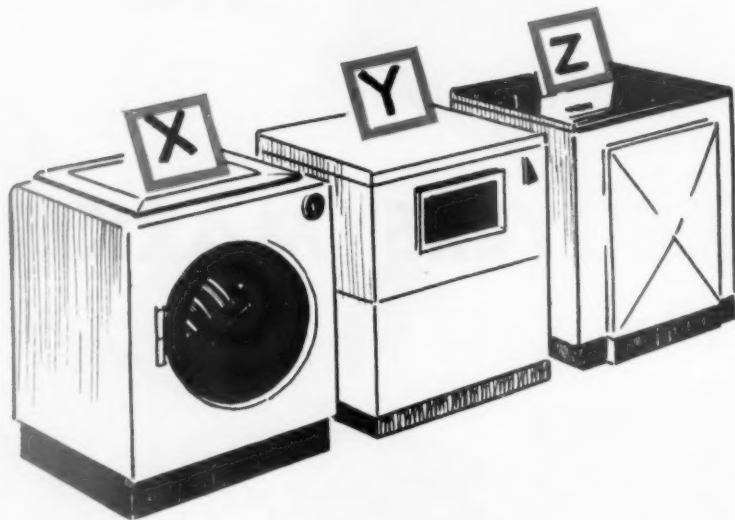
A BUYERS' MARKET



IN the corner grocery and supermarket, the department store, the specialty shop, the automobile showroom, the furniture and appliance store, the American Consumer is shopping for value.

PURCHASE FOR PROFIT.

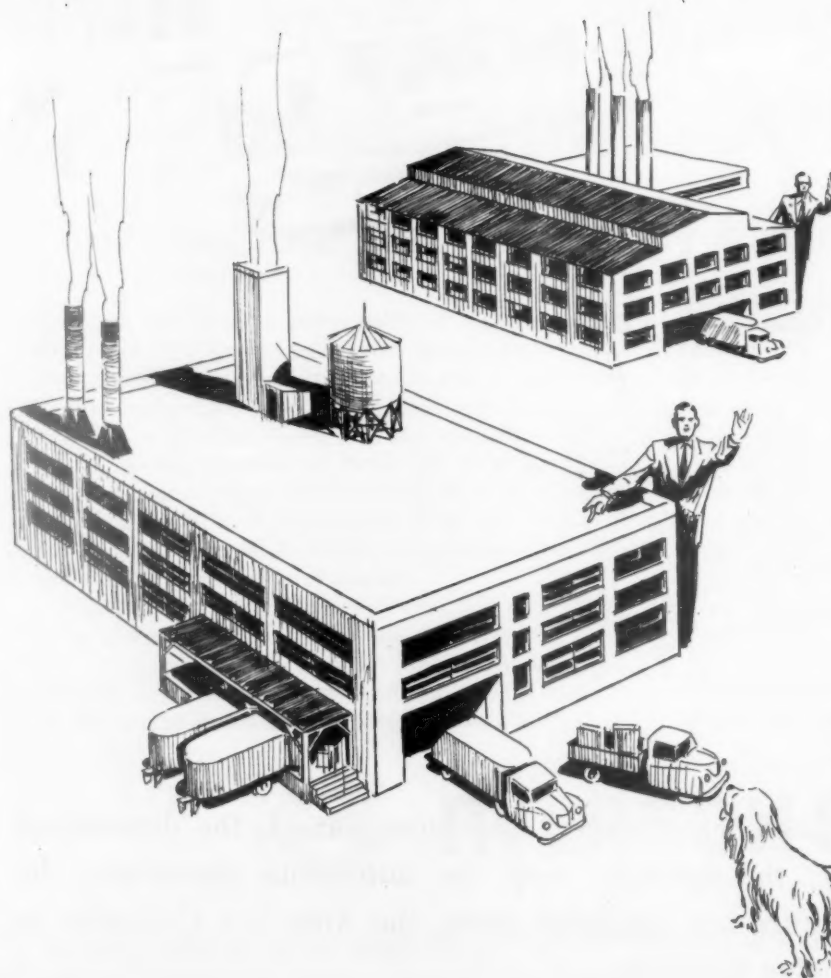
FOR THE FIRST TIME IN 15 YEARS, the consumer has the opportunity for



SELECTIVE BUYING

from the limitless variety and ample stocks of products and merchandise made available to him by today's intense competition.

FOR MANUFACTURERS IN EVERY FIELD, the most important consideration today is their



COMPETITIVE POSITION

in industry and in the market place. They have to make a product that will give value to the customer, at a reasonable profit margin.



LEADING INDUSTRIALISTS AGREE

that the new competition—the chance for profits and the assurance of survival—will be decided on the cost frontier.

Many of the manufacturer's

COSTS ARE FIXED OR RISING—

taxes, labor, security benefits, plant construction and maintenance, replacement of worn and obsolete equipment. The need for modernization to maintain plant efficiency involves constantly higher capital investment.



**THE ONE AREA WHERE HE CAN SEEK AND FIND THE SOURCE
OF COMPETITIVE ADVANTAGE AND ADEQUATE
PROFITS IS IN**

PURCHASING

It is here that he can get greater value and increased efficiency and lower costs through expenditures for materials, operating supplies, production and handling equipment.

PURCHASE FOR PROFIT.

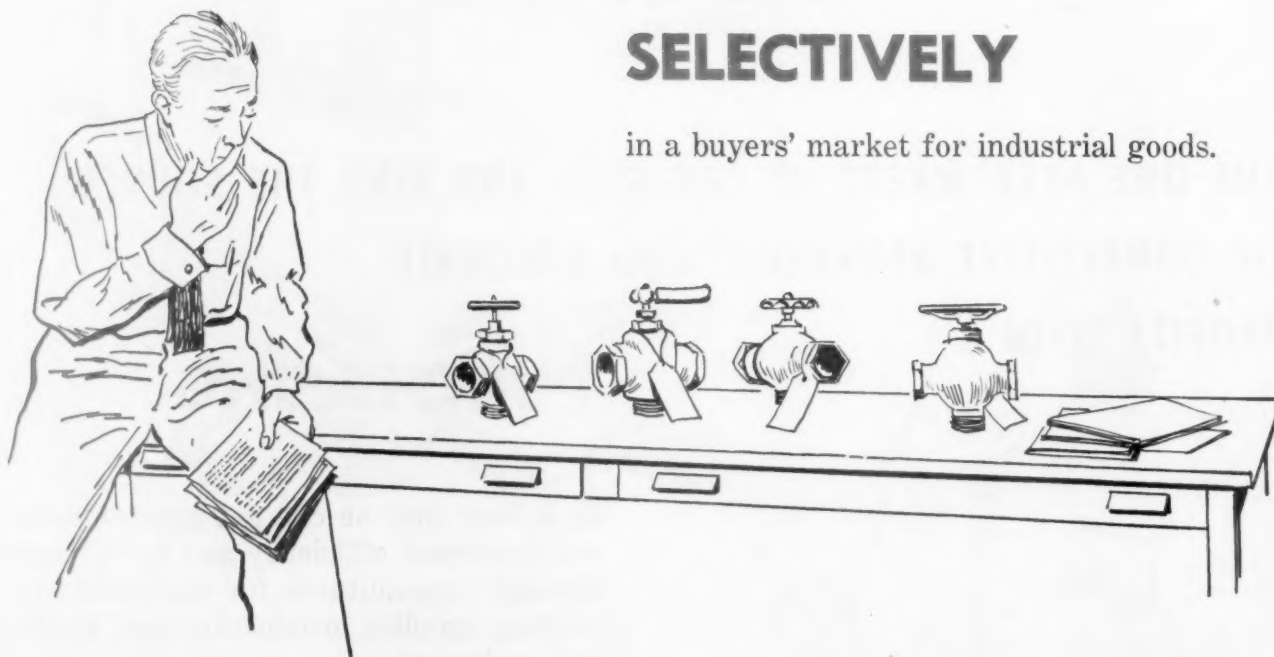
A TYPICAL STATEMENT IS THAT OF H. K. HALLETT, *President of
the Cotton Manufacturers' Institute:*

"We are at the point today where management expects the Purchasing Department to make real contributions in increasing the profit margins of business. PURCHASING is the last horizon where management can look for SAVINGS AND PROFITS."

THE PURCHASING AGENT, upon whom this large responsibility falls, is also

BUYING SELECTIVELY

in a buyers' market for industrial goods.



DURING THE LONG PERIOD

of war and postwar production, his primary problem was finding supply sources and getting deliveries. But today he has the opportunity—and the

RESPONSIBILITY FOR

1. Choosing freely among many suppliers who are eager for his business.

2. Choosing freely from alternative products and services.

3. Promoting the use of materials, designs, manufacturing methods and facilities that will help reduce his company's costs.

4. Evaluating all requirements of materials, products, equipment, and sources in terms of cost-saving potential and end-product value.

The Purchasing Agent's success in meeting these new responsibilities will largely determine his company's success in



MEETING THE NEW COMPETITION

N. A. P. A. Leaders Stress Value Buying . .

E. F. ANDREWS
President, National
Association of
Purchasing Agents

Director of Purchases
Pitman-Moore Company
Indianapolis, Indiana



ONE of the biggest hurdles that Purchasing has had to overcome in its rise to prominence is the common belief that purchasing is a service function and should not be held accountable for net profit contribution. This common mistaken belief has, for many years, been the yoke on the back of purchasing that has stunted the growth of many in the profession.

There have been, however, many men in purchasing who have seen the opportunities in purchasing for profit and have moved forward with determination to seize those opportunities and to show to management that one can truly "purchase for profit."

Today, this is no longer an opportunity but rather a challenge. The days of getting by as a service function are gone and purchasing must "purchase for profit" if it is to maintain the high position it enjoys.

Profit-conscious Purchasing Agents are realizing more and more the potential in Value Analysis, Market Analysis, Material Management, Inventory Control and other developments of sound purchasing principles. Many are the purchasing men who were "born" in a sellers' market under government control, and are going to be weaned on hard competition. For all of us in 1954, it will be "Operation Cut Cost."

This issue of Purchasing Magazine is but one of many aids available to today's Purchasing Agents to help him sharpen his "purchasing for profit."

GEORGE A. RENARD
Executive Secretary-Treasurer
National Association of
Purchasing Agents
New York, N. Y.



COSTS—Prices—Sales—Profits are back in the business news headlines because they are being given priority consideration at all important company management meetings.

The presentation of a monthly, quarterly or annual balance sheet sets the stage by reporting profits, and probably sales. Then the what-to-do-about-it argument leads immediately to prices and competition, and then to the basic problems of costs.

In these management meetings facts are trumps. So material and inventory costs are accepted as fundamentals in the development of profitable operations. That keeps purchasing, its personnel and activities under the same analytical microscope that measures all executive values.

Certainly there is no propaganda magic or personal promotion in the recognition of purchasing as a member of the management team.

Nor is there any sleight of hand about meeting that responsibility by securing the best values available. Purchasing measures values by the same yardstick that management measures purchasing—profits for the company.

So effective purchasing is the search for better values, which is the road to lower costs. The practical information in this "purchase for profit" issue on successful purchasing methods and procedures is a helpful and welcome guide.

Management Expects Value Buying . . .



CREATIVE APPROACH BASIC

SOUND PURCHASING is, of course, an essential element of sound management.

During the past year, about 48 per cent of our sales dollar was spent for materials, services and supplies, which is ample proof of the importance of

purchasing to the profit picture of Carrier Corporation. But beyond this, we must consider the highly competitive nature of the air conditioning industry in terms of both quality and price, its swift expansion with a constant increase in the volume of purchases, and the fact that we sell to so many companies from whom we also buy.

Our purchasing program is tied closely to the future growth of the corporation through the medium of long-range sales forecasts. The objective is to enable the purchasing department to anticipate requirements and to bring in what is needed at the right time and the right place.

For some months now the competitive situation in our industry has been such that the purchasing people of Carrier have been called upon to intensify a constructive cost reduction program. However, there is at least some danger that this could be carried too far. The point to be made here is that air conditioning equipment must meet a continually rising standard of performance specifications.

During the first four months of the current fiscal year, our purchasing department made a notable contribution to lower costs and it is believed that this was done without any concessions as to quality. Specifically, the savings amounted to 3.6 per cent of total purchases.

Without question, a wise and creative approach to purchasing is basic to successful operation and is emphasized as such by Carrier management.

CLOUD WAMPLER,
President and Chairman
CARRIER CORPORATION

HIGHLY TRAINED BUYING PERSONNEL NECESSARY

THE importance of purchasing at Raytheon cannot be overemphasized. With our research and development continually expanding in the entirely new and ever broadening areas of the electronics age, the purchasing personnel in each of our operations often must exercise purchasing know-how above and beyond normal procurement activity. Our buyers not only must locate sources for parts and



**CHARLES F. ADAMS, JR., President
RAYTHEON MANUFACTURING
COMPANY**

materials, but because of exacting tolerances and special materials, they frequently must be alert to the necessity of training our vendors in new methods of fabrication and processing.

Because we deal with several thousand vendors, our purchasing personnel become builders of company good-will, as they execute sound procurement policies. They help build our reputation for quality, integrity, and fairness in our dealing with vendors, with whom we spend about 45 per cent of our sales dollars each year.

Since a separate purchasing department serves each operating division, one of the very important functions of our procurement activity is the coordination at staff level of the efforts of each purchasing department in order that the economies of quantity buying may be maintained. Efficient purchasing at Raytheon requires complete coordination not only of each procurement function, but also with engineering, production, and the financial management of the company. Without highly trained personnel in our specialized purchasing departments, Raytheon could never effect the successful transition of our research and development activities into finished products, at a marketable price. With this type of teamwork, we believe that Raytheon can continue to expand our nation's dynamic electronics frontier. Collectively, our purchasing personnel constitute a vital section of the Raytheon organization which is making this possible.



**IVAR N. HULTMAN, Vice President
EASTMAN KODAK COMPANY**

PROFIT-MAKING DIVISION

THROUGH VALUE BUYING, the purchasing division at Kodak Park has truly become a profit-making division of the company. It is through the development of a strong organization and sound policies that this purchasing division is able to help maintain the overall position of the Kodak Company in today's competitive market.



**ROSS D. SIRAGUSA, President
ADMIRAL CORPORATION**

A Most Important Function

WE consider purchasing one of the most important functions in our business. Admiral purchasing agents not only buy raw materials and components for our television and radio receivers and home appliances, but they also take a leading role in expediting deliveries.

Sound procurement in today's highly competitive market will enable a company to maintain and improve its sales position. We expect our purchasing agents to treat their suppliers in the same manner as we expect to be treated by prospective purchasers of our products. They can be invaluable agents of good-will for a manufacturer.



**S. D. DEN UYL, President
BOHN ALUMINUM & BRASS
CORPORATION**

Must Question Every Requisition

THE return to a more normal competitive market makes our purchasing function extremely vital for the maintenance and improvement of our company position. We delegate to our purchasing people sufficient authority to carry out their full purchasing activity. They are required to maintain close liaison with all our plants and departments and to know the uses of materials they buy as well as the markets from which these materials come. Our purchasing personnel are expected to question the kind, quantity and delivery of material being requisitioned, whenever in their opinion the best interests of Bohn are served.

Our purchasing department contributes to the progress of Bohn by obtaining maximum value for each dollar spent, while maintaining the highest standards of ethics in business practices. It is a matter of policy with us to always keep in mind that all suppliers must be permitted their fair profit if our economy is to grow and prosper.

In addition to the usual functions and responsibilities, purchasing has the important activity of furthering our public relations through contacts with salesmen and suppliers. Since products manufactured by Bohn are for the most part component parts and not identifiable to the eventual consumer, we count heavily on our purchasing department to keep our company name and its products before the public in its daily contacts.



**C. L. AUSTIN, President
JONES & LAUGHLIN STEEL
CORPORATION**

Department Head A Top Officer

IN J&L the head of our purchasing department is a vice president and is a member of our Management Committee. He is charged with a very heavy responsibility for the proper spending of a large chunk of our sales dollar.

Purchasing is a service function in J&L. The purchasing department must work very closely with sales and production in the day-to-day operation of our business. The purchasing department

must also aid several other departments in discharging their responsibilities—such as the engineering and construction groups in contracting, the treasurer in inventory control, etc.

We expect our purchasing organization to deal fairly with our suppliers, not only because many of them are also customers, but also because fair and friendly handling of its dealings fits our general company policy.



**S. B. WITHINGTON, President
LYCOMING DIVISION
AVCO MANUFACTURING
CORPORATION**

Needs Confidence of Management

THE competence of a purchasing department in these days of heightened and welcomed competition may well mean the difference between success and failure of a business.

With Lycoming, of course, as with other companies, quality must be the prime consideration. Once this is as-

sured, our purchasing agents must then apply themselves to the demanding job of bringing us that quality at the lowest possible cost.

It is my opinion that purchasing agents must be honest, fair, capable and know the overall "picture" of the business and of the country, before they can serve us best.

For although they are specialists, unless they are taken into the confidence of top management, they will be unable to grasp fully the immediate needs of the company and its future possibilities.

Purchasing agents are becoming increasingly better informed and thus more valuable to companies such as ours.



**J. L. McCaffrey, President
INTERNATIONAL HARVESTER
COMPANY**

An Important Management Factor

WITH more than 50 cents of every sales dollar which the Harvester Company realizes going for the purchase of materials and supplies, it can be readily seen that the purchasing function is an important management factor in our company. The competence with which our buyers and purchasing executives procure the large and varied volume of materials and supplies used in our operations obviously has a major influence on our costs and our profits and on the price at which we are able to sell our products.

We purchase from upwards of 30,000 suppliers. We expect that each buyer will be one of the best informed men in the company on the lines of materials which he purchases. We expect him to be constantly alert and insistent on the quality of materials. We expect that while he must buy at a price which will be profitable to us, it will also return a profit to the supplier. We know we cannot build good will among our suppliers unless we deal fairly.

In a field where such a high degree of training and skill is required, purchasing is recognized in our business as an integral part of the management function. That view of it has been validated by the growing status of the function in the current business situation where costs are so important. As we return to more normal business conditions, we expect to see the purchasing function become even more important.



**S. WYMAN ROLPH, President
THE ELECTRIC STORAGE BATTERY
COMPANY**

Purchasing Important To Profit

THE money spent for purchased materials represents a very high percentage of our manufacturing cost. Good purchasing, therefore, has a most important bearing on profit results.

We expect our purchasing department to have more than a knowledge of fair prices and dependable sources of supply. They must be well informed on market conditions and trends. They must know and understand new developments which might lead to advantageous substitution of one material or part for another. Of course, we expect them to have the supplies delivered and available at the place and time they are needed to assure continuous production.



**FORTUNE PETER RYAN, President
ROYAL TYPEWRITER COMPANY,
INC.**

Prime Contributor to Quality

THE Royal Typewriter Company recognizes that good purchasing does not mean having the ability to say "No." Rather, it is the intelligent examination and analysis of new equipment, supplies and services to determine how they may be utilized—either as a completely new concept, or with greater efficiency over existing equipment, supplies and services.

Ours is a highly competitive market in which it is necessary to supply an outstanding quality product at com-

petitive prices. In order to incorporate higher quality manufacturing techniques and top quality materials in our product to be sold at a competitive price, our purchasing department has the prime responsibility of obtaining full value for the moneys disbursed and accomplishes this with a great measure of success.



**J. L. HOLLOWAY, President
CRANE CO.**

A Heavy Responsibility

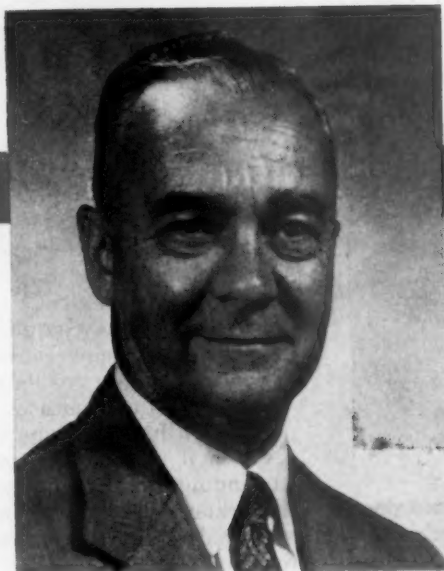
BECAUSE Crane Co. has manufacturing plants in more than a dozen cities of the United States, Canada and England, and sales and service branches in over 175 cities, we are rightly known as both a manufacturing and selling organization. But purchasing is so important to both manufacturing and selling it takes on equal importance with them in our profit and loss statement.

In addition to procuring raw materials and supplies for manufacturing valves and fittings, and plumbing and

heating products, our purchasing activities include contact with approximately 8,000 suppliers to provide the purchased articles we sell.

So, our purchasing personnel have a heavy responsibility. Upon them the ultimate success of all other phases of our business depends. Their job demands the mastery of an endless amount of details, expert knowledge of materials, a good working knowledge of our manufacturing processes and more than a nodding acquaintance with suppliers. They must be alert, fair, tactful and scrupulously conscientious.

They have a public relations function, too. Since we sell as well as buy, we require our purchasing personnel to act toward salesmen as we would like to have our salesmen treated by our prospects—to follow the Industrial Golden Rule.



Progressive Men Needed

**W. J. McBRIAN, Vice President
CATERPILLAR TRACTOR CO.**

IT is self-evident that purchasing plays a vital role in every company's over-all operations.

Competent purchasing can be realized only with a good organization made up of able men—men who are honest, who display integrity in their company, community and personal dealings. It takes progressive men who are fully aware of the economies inherent in skillful purchasing and whose actions exemplify the importance of knowing thoroughly the products they buy, of making certain the company receives full value for its expenditures, of maintaining good vendor relations, and of recognizing cost reduction suggestions. Last but not least, it takes men with the ability and desire to train the younger men of an organization to carry on successfully its purchasing practices.



Depending On Our Purchasing Division

**LEE R. JACKSON, President
THE FIRESTONE TIRE & RUBBER
COMPANY**

HAVING spent the major portion of my business career in selling, I have had an unusually good opportunity to observe the activities of many purchasing departments at close range.

To me it has been stimulating to witness the growth and development of purchasing into its important place in today's business structure.

The complexity of modern business demands that purchasing be not confined to buying in its strictest sense. It requires, in addition, a well rounded knowledge of current business trends, forward planning, inventory control and use of substitute materials. These all combine to make modern purchasing a challenging, vital factor in present day business.

Good purchasing develops and brings out the best in our sales representatives, requiring that they be able to intelligently discuss purchasing problems with equal knowledge and confidence.

Purchasing reports direct to me and is kept fully advised of all new programs and our long range planning. We welcome its views on current business trends and its helpful assistance in maintaining good customer relations.

Under today's competitive conditions, with raw materials representing over 50 per cent of our sales dollar, we are depending on our purchasing division to bear its full share in "purchase for profit" in 1954.



Role More Important Than Ever

**ROY FRUEHAUF, President
FRUEHAUF TRAILER COMPANY**

FRUEDHAUF Trailer Company has long felt that competent purchasing is an integral part of the major management function. This year—more than ever—competent purchasing may well be the difference between profit and loss.

Our purchasing department, which is headed by a vice president, is responsible for procurement; development of sources; and of market trends forecasting. Today's buyers' market has made their role in management more important—if they can be any more important.

As early as last September all branches of the purchasing department have worked toward reduced prices because some raw material prices had been lowered and our vendors had increased their efficiency by new equipment, etc. Our weekly progress reports, carried on through our decentralized setup at the manufacturing plants, calls for inventory-and price-minded attitudes. The fact that we are able to purchase and effect faster delivery through the reduction of lead time materially helps our inventory condition. To repeat, competent purchasing will have a major part in the telling of the 1954 business story.



Purchasing for Profit

MANY articles on purchasing are based on the premise that buying in recent years has become a fine art. These stress the importance of individual initiative and the ability to correlate engineering factors and market trends with particular purchasing problems.

We should be careful, however, not to play down the equally important scientific side of purchasing. The modern purchasing department cannot realize its full potential without trying to develop, as well as apply, new techniques and formulae designed to stretch the buying dollar. The chance to combine his know-how with these techniques throws a stimulating challenge at today's buyer. For it is more and more apparent that the sound and profitable operation of a business depends, to a large extent, upon an aggressive purchasing program.

Contract Buying

One technique which has been used with marked success is that of contract buying. This is, of course,

not a new concept and in many companies is more or less standard practice. At North American Aviation, Inc., for example, contract buying has been used for years in purchasing certain types of MRO supplies. But adaptation of the technique to procurement of airborne materials is quite limited by factors peculiar to the airframe industry.

Frequent engineering design changes make it difficult in most cases to accurately forecast the consumption of airborne materials over a long period. And the price of many items is too susceptible to changing market conditions to make contract buying the right approach. Experience shows clearly, however, that certain airborne materials can be bought on a contract basis. Some hardware items, like rivets, washers, hose fittings, etc. are more or less standard for all models of aircraft. We have been able to establish a reasonably accurate consumption factor for this type of material. So we can forecast fairly exact requirements for twelve months.

Medium pressure hose assemblies

offer a good example. Before we were able to forecast our requirements, we could not persuade hose manufacturers to keep sufficient raw material inventories to enable us to order the completed assembly as needed. Their unwillingness is understandable, since at that time we had no consumption history on which to base a forecast of our needs. Obviously, if consumption factors could be set up, we could go to a supplier and give him a good idea of the amount of hose we would need over a twelve month period. At the time we made our estimates, we would not necessarily know the individual lengths of hose that would be needed. As orders would be placed against the contract, however, we would know exactly what lengths were required.

Put Theory Into Practice

As the first step in putting theory into practice, we furnished potential suppliers with an estimate of requirements for hose assemblies for an entire year. Using a 12" hose

Scientific purchasing techniques call for close teamwork by all departments. Here discussing a problem in coordination are (l. to r.) Eric L. Martin, Engineer in Charge, Landing Gear Section; J. M. Preshaw, Assistant Supervisor, Purchasing Department; Rulon Nagely, Director of Material; K. V. Petterson, Purchasing Agent.



in the Aircraft Industry

By Rulon Nagely, Director of Material

North American Aviation, Inc.
Los Angeles, Calif.

length as a standard, quotations were submitted on the basis of 4¢ per inch to be added to or subtracted from the base length price according to the size of the hose assembly to be purchased.

Almost identical prices were quoted by two suppliers. We decided to split the business equally between them. Knowing what the requirements for hose assemblies would be, each supplier was able to stock enough bulk hose to manufacture and deliver the completed assemblies with but two weeks' notice. This cut lead time appreciably. And we did not have to keep large inventories of hose assemblies in our warehouse.

Year's Saving: \$20,000

We estimate that contract buying of hose assemblies saved us approximately \$20,000 in 1953. This figure does not take into consideration the saving through elimination of the need for quotations and the vast reduction in paperwork and follow-up.

The success of such purchasing methods is largely dependent on cooperation from the engineering and manufacturing departments. Of even greater importance, perhaps, is a sound and efficient material control system. Accurate records must be kept of production requirements as well as inventory withdrawals. Otherwise it is impossible to get full benefit from specialized purchasing techniques. An efficient material control system, coupled with a sound liaison between purchasing, engineering and manufacturing makes purchasing for profit a meaningful and valuable reality.

An Assembly Buying Technique

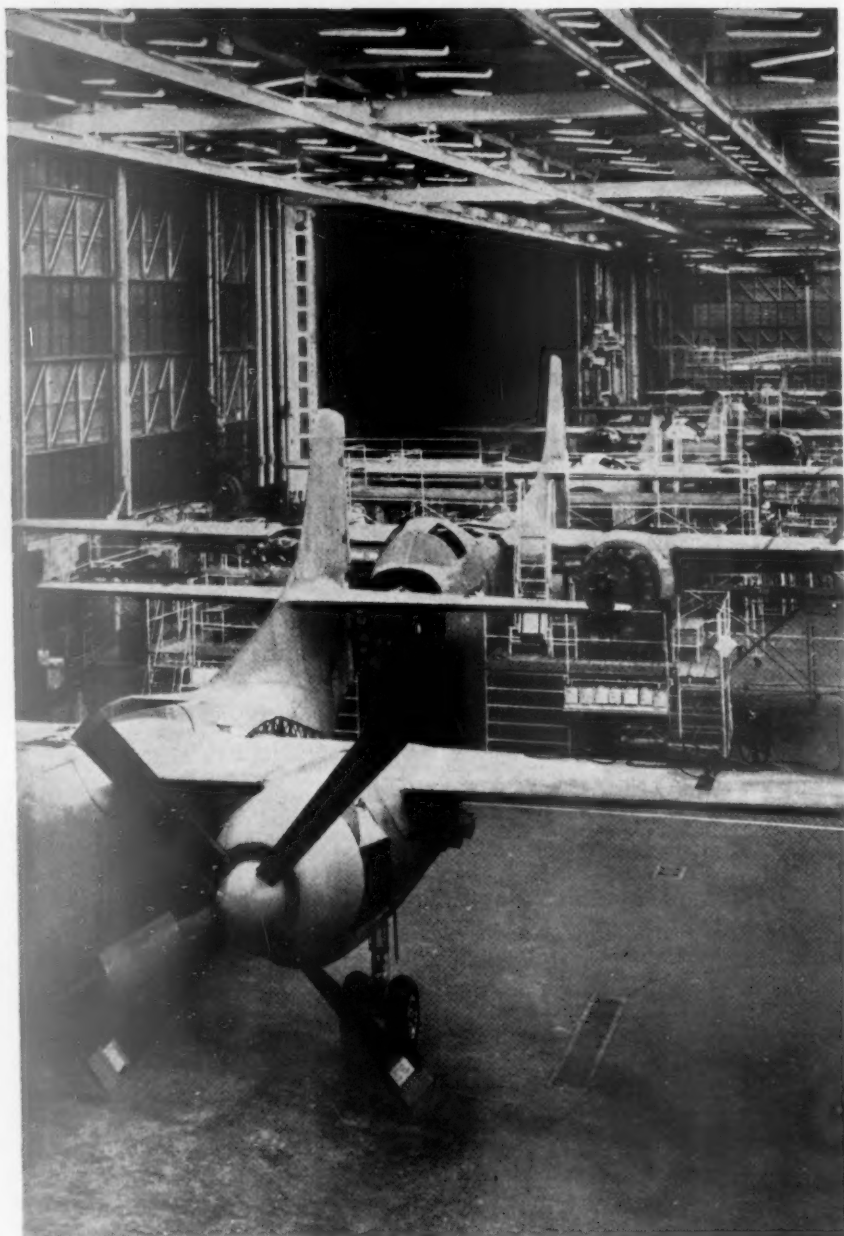
This may be demonstrated by another technique—assembly buying. At North American we have to think not only of the initial price of materials to be purchased, but also of the cost of installing such materials in the end product. A thorough study of assembly and installation drawings often indicates that it is better to purchase an entire assem-

bly than to buy its separate units and assemble them at our plant.

Make or Buy?

For example, in 1952 our engineering department issued requirements for a new type of hermetically sealed switch. At the time, the cost of this item used in assemblies manufactured at North American was about \$6.00 per unit. A careful examination of the assembly drawings calling out the new switch indicated that it would be used in rather large quantities. Moreover, the completed assemblies not only required single units, but in some instances, banks of two or three switches were necessary. In addition, the assemblies required a new type of special housing.

We assumed that it would be more profitable to purchase rather than manufacture the assembly. Our purchasing department asked the company producing the switches to develop a complete switch and housing assembly to conform to our



One of the production lines at North American's Columbus, Ohio, plant. Purchase of air-frame materials poses special problems of procurement not met in all industries.

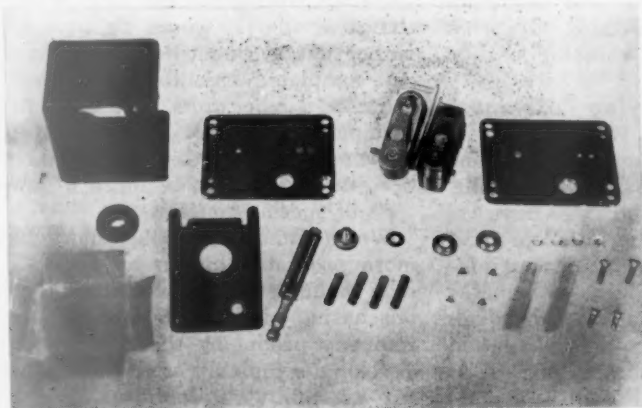
specifications. Since satisfactory units were being made in our plant, we were able to give the supplier enough detail and assembly drawings, as well as other factual information, to keep to a minimum the need for additional development costs on his part. The result, culminating eight months of extensive research, was the production of an improved unit at a much lower cost.

A comparison of the cost of making the assembly at North American with the cost of the new assembly showed that the average saving per unit was \$27.95. Applying the average unit saving to the over-all requirements for each airplane, the total saving amounted to approximately \$420.00 per airplane.

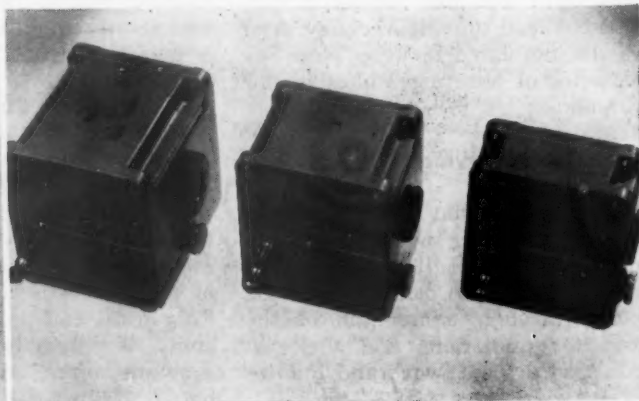
Enlarging "Purchasing for Profit"

These examples show how a scientific approach to purchasing problems enlarges the connotation of the phrase "purchasing for profit." As stated earlier, the role of the individual buyer in the purchasing program is a major one, considering the profits to be made in purchasing. When buying "know-how" is shaped and moulded by proven scientific methods and techniques, the end result is bound to be a strengthening of purchasing's contribution to business success. In light of present conditions, where the switch has been made from a sellers' to a buyers' market, the efficiency of a purchasing program becomes more and more the yardstick of whether a business shows a profit or a loss.

Details of a 2-bank switch and housing assembly manufactured and assembled by North American at its Los Angeles plant.



The decision to buy instead of make brought big savings. These are switch and housing assemblies purchased by North American.



Planning A Program for Cost Reduction

Ralph F. Hornbach, Director of Purchases, Geo. D. Roper Corporation, Rockford, Illinois

FACED with declining unit volume in 1954, the sales departments of our companies will be competing for their share of a reduced market. With limited sales of appliances the potential for increasing the profit of all companies through greater sales would be at the expense of other companies. I don't know of any company that would give up its position without a terrific battle.

There has been a lot of talk of boosting demand for our products by various means to the point where they are irresistible to the consumer

—whether he has money or not. This type of approach, we all know, has its limits. When an economic adjustment occurs, we have to be prepared to operate profitably with reduced volume.

One of the answers to profitable operations with lower sales can be found in the approximately 55% of every sales dollar you spend on materials and services. What other element of the appliance manufacturer's business offers greater opportunity for immediate benefits? Possibilities of savings through taxes are relatively low, and through re-

duced wages, remote. Labor saving machinery usually requires vast expenditures for capital equipment to accomplish limited savings. The efficient spending of this 55¢ out of every sales dollar is necessary if you are to show a profit.

The logical question is: How do we do it? How do we purchase for profit?

Here are some actual examples of purchasing for profit taken from our daily activity files. They probably have direct application to your operations:

PROCUREMENT RESEARCH: In January 1953 we started using a component with the specifications of cold rolled steel, polished and chrome plated. Previous cost studies conducted by Procurement Research indicated tremendous cost savings could be made by a substitute material and process. Sample components were obtained and submitted to our Research and Development department. After comprehensive tests, they were approved for use. Results of procurement research activity on this project will contribute \$55,000 annually toward profit. A. G. Salmi, Assistant Purchasing Agent is at right, J. B. Stuman, Chief Engineer, Design, is at left.



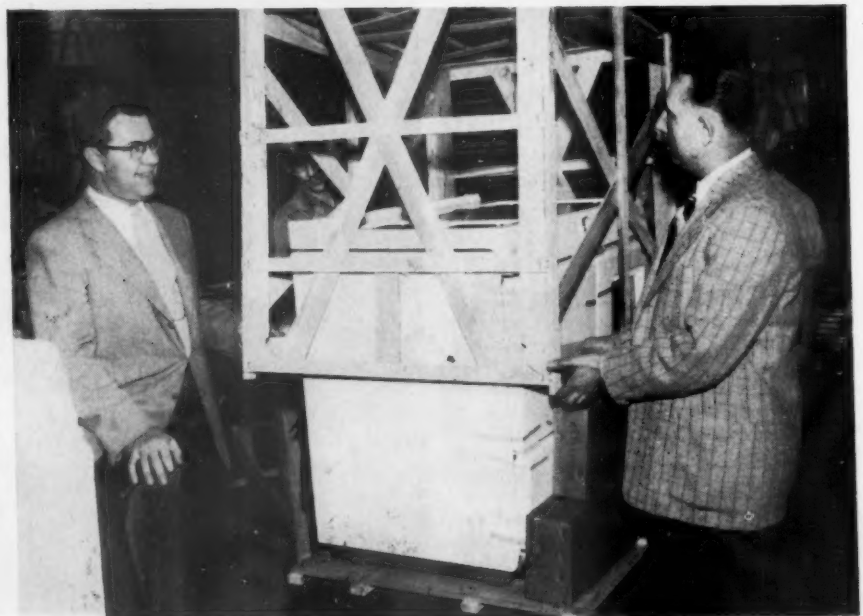
VENDOR RELATIONS: Specifications from our Ordnance Division called for square edge silver brazing wire. Our vendor suggested a change to rolled edge rings. He took his case to the Ordnance Division and convinced them that savings could be made. Cost reduction through his activity totaled \$40,000 in a year. Where good vendor relations exist, you will find your suppliers keenly interested in your profit position. Examining the ring in actual application are H. H. Thomas, Buyer, (left) and Creighton Strict, vendor's representative.



INVENTORY CONTROL: During the first eight months we were actively charged with the responsibility for inventory control, we reduced our inventory by \$200,000. During the same period, there were no interruptions due to lack of material. Putting our "cost of possession" figure at about 10%, we can add another \$20,000 per year profit through inventory control. Here, J. R. Muirhead (left) and W. E. West, Assistant Purchasing Agents, are shown in the pump shop stock room.



VALUE ANALYSIS BUYING: Initial price paid is not the final answer. Studies showed that a different principle could be employed in crating our ranges. This enabled us to remove operators from the assembly line. The crate itself was more costly than before, yet the change resulted in a yearly saving of better than \$12,000. W. M. Hollingsworth, Purchasing Agent (left) looks over the new crate on the assembly line with R. P. McCook, plant superintendent.



STANDARDIZATION: Our design and specifications required these components—fluorescent tubes and ballasts—to be made on special order by our supplier. On investigation, we found that, with minor modifications to our ranges, standard components could be adopted. The yearly savings on these two items amounted to better than \$148,000. L. C. Stites, Buyer, is at left. At right is C. G. Kane, Chief Engineer.



R. F. Hornbach, Roper's Director of Purchases (right) advocates and practices the closest coordination with all other departments of the company. He is shown here discussing a technical point on pump testing with W. R. Batten, Pump Plant Manager.



The "cost of possession" mentioned above in the inventory control example is, of course, a difficult and often controversial item to track down. I have seen and heard of figures ranging anywhere from 5% to 25%. The 10% figure we have used in the illustration is broken down as follows:

Interest on investment—5%

Handling, damage and obsolescence risk—2%

Insurance, taxes, etc.—2%

After considering all elements about how much inventory is enough, there are other questions that must be answered, but which are often overlooked by people outside the purchasing department. Is the material or component available

in the market place? Who would be in a better position to determine the availability of supply than the purchasing department? The purchasing department is in daily, almost hourly contact with the situation. Who would know the importance of maintaining a production line so that commitments to customers can be met on time? After all, the purchasing department receives confirmations daily from their own suppliers.

In addition to those points just illustrated, *position in management* of your purchasing operation is of extreme importance. The ability of your department to apply knowledge of markets, products, and business conditions can help shape intelligent company policies and pro-

grams. The importance of having purchasing in on the planning stages is shown by our experience with the question of obsolescence.

During the fiscal year 1952 our obsolescence averaged \$112,000. This was due, in part, to the lack of coordination between the design, planning, and acquisition of materials and supplies. This policy was changed in 1953 and our obsolescence at the close of business in 1953 was about \$3000. This is actually below normal for this type of operation.

A profit, after all, is the difference between income and out-go. The size of the out-go is just as important in determining the ultimate profit as the amount of income. Aggressive, modern management takes advantage of the counsel of

Geo. D. Roper Corporation

PROCUREMENT RESEARCH SECTION

AIMS

A. WHAT'S NEW? And how will it be of value to the Geo. D. Roper Corporation? We have to seek, find and evaluate the possible use and economic value of new technological advances. This refers to their particular application, either immediately or in the practical future. In particular, this activity is directed to the following:

- 1—Investigation of new or alternate materials or products. This includes the gathering and analysis of data to determine the value of such items.
- 2—Investigation of new equipment, tools, or methods. This is, in practically every case, a joint project with engineering, operating, financial, and management personnel.
- 3—Securing technical and cost data on various materials, products, and equipment for other personnel, especially engineering and operating.

B. WHAT WILL IT COST? And what will it look like if a certain part is made according to new design. When design engineers have designed a part to do certain things or to improve sales appeal, it is necessary to determine that part's economic value. Exact prototypes are also often needed so that actual appearance or performance can be evaluated. These data and prototypes are a phase of procurement research.

C. WHAT SPECIFICATIONS ARE NECESSARY to have comparable quotations from various potential suppliers, or to assure that the purchased item meets requirements? Assisting the engineering department in setting up practical and economic specifications falls in line with procurement research activity. Purchasing can secure much of the necessary data from vendors and manufacturers, either of the basic materials or the functioning products.

PROCUREMENT RESEARCH PROCEDURE

This falls into the following general classes:

A. Watching for news about developments which may be of value, securing full information about them, making preliminary evaluations of their value. This is done with the cooperation of the design engineering department, sales department, plant engineering, and operations management.

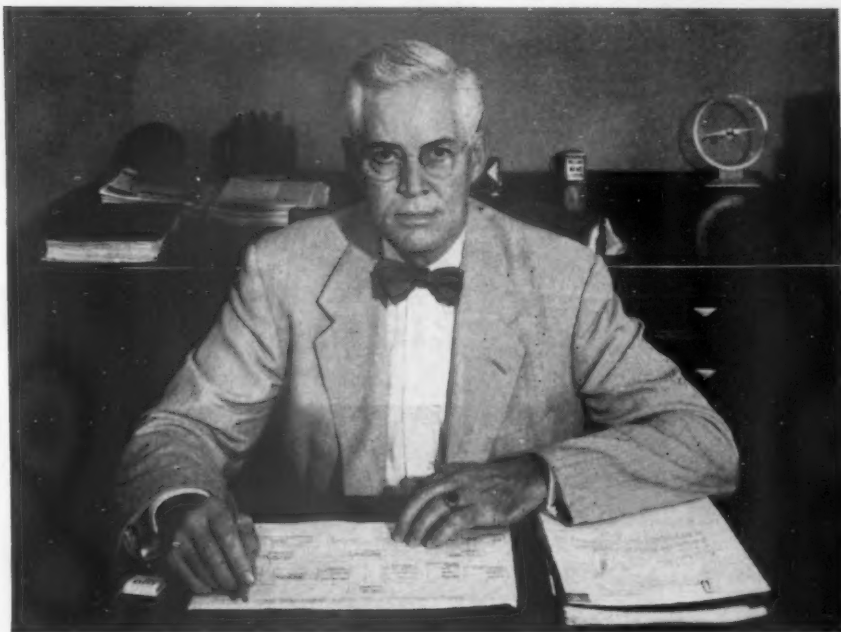
Sources include articles and advertisements, discussions with salesmen about new products their companies are working on, product exhibits, plant visits, and inquiries to vendors about modifications that would be mutually profitable.

Necessary technical data and cost information are secured by letters, telephone calls, interviews and discussions. This material is brought to the attention of proper persons in the department most concerned. They can use this for immediate application, or keep it for possible future use.

B. When design engineering, plant engineering, or operations have some new design for which the cost must be secured, they request that the information be obtained by the procurement research section of

the purchasing department. The same procedure applies to technical and cost data about new materials or products, enabling these departments to make the best possible decisions about the value of the equipment or supplies. (If their requests are concerned with materials, products or supplies already being purchased, or available in the general market, they are handled by other personnel in the purchasing department.)

For each "project" being investigated by procurement research, a chronological journal is kept. This helps not only in guiding or channeling the investigation to a conclusion and keeping it current, but also as a reference for future use. In the short time that the procurement research activity has been carried on here, it has been found that advantage cannot be immediately taken of new developments in technology. But some time later the development may be not only practical but essential. At that time it is valuable to have a record of the investigation available, even if only as a starting point for further and more detailed study.



S. H. HOBSON

President

GEO. D. ROPER CORPORATION

"Our Purchasing Department has set up for us a sort of Operation Watchdog, and we are increasingly pleased with the results. It is obvious to any businessman today that the competitive pinch is tighter, and that we must look to our service departments, as well as to our operating departments, for economies. At Roper, the Purchasing people are pointing a clear way. I can recommend the procedures suggested by our Mr. Hornbach to anyone concerned with practical, day-to-day economies."

their purchasing departments by having a representative of this activity at the management level.

Where Is Opportunity?

Ask yourself this question: Where else within your organization can management get factual market information that has not been colored by the usual over-optimistic sales departments or the cautious optimism of the financial departments? Purchasing is an excellent sounding board for reporting and observing marketing trends. Its contacts with a vast field of suppliers, diverse in nature, yet specific in commodity, provide a reservoir of information. It can and should be tapped to keep your company abreast of the rapid changes in our complex economy.

How Roper takes advantage of the opportunity to use this special-

ized information of the purchasing department can be seen from the position it gives procurement in the corporate structure. Purchasing is on a staff level with the treasurer; vice president in charge of operations (manufacturing service, methods, standards, plant engineering); vice president (public and trade relations) personnel and labor relations department, and the secretary. The purchasing division has control over buying in the appliance, ordnance and pump divisions of the company.

Our Basic Aim

The somewhat specialized activity of procurement research is outlined in detail in another part of the article. Our basic aim in procurement research is to capitalize on the ever increasing acceleration of

improvements and advances made by industrial research. This includes, of course, basic research work in scientific and technical fields. In other words, we are passing no chances to help us do a better purchasing job, and to contribute greater profits to our company.

Summarizing, *you can purchase for profit*, and the most lucrative fields can be found in:

1. Procurement Research
2. Value Analysis Buying
3. Standardization
4. Vendor Relations
5. Recognition of Purchasing as a Management Function
6. Inventory Control by Purchasing

There are many other ways in which purchasing can contribute to profit, but for immediate results these six elements will net you the greatest and quickest return.



Building A

Castings account for a sizeable chunk of the company's purchasing dollar. An intensive analytical study of the buying of these components has brought big savings, improved quality. This is the machine line for integral horsepower compressors.

Value Analysis Section

Carrier's
Director of
Purchases,
Adolph Ruediger



VALUE analysis as a purchasing technique did not spring up overnight. Nor is it something that can be suddenly brought into a purchasing department to replace or make obsolete existing operations.

Value analysis is, rather, a development and refinement of basic buying principles, adapted to current economic and technological conditions. Its adoption is ordinarily an evolutionary process which improves on earlier methods, building on rather than discarding them. Much of its effectiveness is based on the increased authority of purchasing in management, the avail-

ability of trained, specialized analysts to the purchasing department, and the competitive situation of a particular company.

At Carrier Corporation, Syracuse, N. Y., value analysis as an organized procedure is still in the evolutionary stages. Its full accomplishments as a formal activity in the purchasing department may not be known for a year or two. But for those interested in setting up value analysis sections in their departments, there is much to be learned in Carrier's approach. It gives a good demonstration of how purchase analysis must grow on basic good buying, and how it has to be

established on a flexible basis to suit the needs and problems of a specific company.

An earlier article on Carrier (*Purchasing*, April '54, p. 96) described how the purchasing department has been decentralized to fit in with the company's shift from a functional type organization to one based on products and markets. It also touched on the intensification of a cost reduction program to continue improving Carrier's position in a highly competitive market.

As part of the decentralization move, a purchase analyst has been placed on the central purchasing staff, with responsibility for assist-



This insulation cutting department was eliminated when the material was purchased cut to size, rather than in rolls. Storage space was freed and buying costs were reduced.

ing division buyers in cost reduction projects, suggesting definite projects, or initiating his own. He will also aid in the training program in purchase analysis for all buyers which is now being set up.

Value analysis at Carrier is admittedly in the initial stages. But the potential it holds for cost reduction for the company is shown by results already achieved through applying the "value analysis mentality" to day-to-day purchasing problems. Adolph Ruediger, Director of Purchases, has stressed that approach consistently in the two and a half years he has been at Carrier. Without benefit of a formal analysis program, Carrier purchasing agents and buyers have met regularly and discussed possibilities and methods for cutting costs.

A few impressive examples will show how this preliminary cost-reduction drive has set up a "tradition" on which an organized value analysis program can be built:

GALVANIZING: The entire galvanizing sub-contracting set up was studied, with special attention to analyzing quantities of materials

sent out and the trucking and unloading costs involved. By establishing a second source of supply, where one had been used before, a total savings of \$30,000 in one year was obtained. There were also tangible savings through simplifying and condensing the number of classifications under which galvanizing was invoiced. This saved considerable paper work on both shipping papers and checking of invoices.

INSULATION: Carrier air conditioning and refrigeration products

use a good deal of insulation. One of the internal departments which took fiber glass insulation purchased in rolls and cut it to size was surveyed. On purchasing's recommendation, the insulation was bought cut to size. As a result, an entire cutting department was eliminated and big savings in storage were obtained. The parts are now brought into the plant in tight bales rather than in loose rolls. The savings per year exceeded \$50,000.

CASTINGS: A comprehensive study of all castings and suppliers was begun, aided by a foundry technical group set up by Mr. Ruediger in late 1951. This involved considerable reshopping, close evaluation of types of pattern equipment then in use, and an analytical review of rejections occurring in Carrier plants. Many patterns were moved to foundries more suitable for that particular type of casting, patterns were improved, and foundries were alerted to problems that were causing a high rate of rejections. The savings in purchases alone have reached more than \$65,000 annually. Further intangible savings were made by the reduction of rejections.

CAFETERIA SUPPLIES: Working with the manager and assistant manager of Carrier's three employee cafeterias, the purchasing department was able to reduce costs 3% or approximately \$8,000 a year. This was done through re-evaluation of quality standards, enlarging the number of supply sources, and the issuance of yearly blanket



During development of the Value Analysis program, cost reduction possibilities are still thoroughly discussed at regular meetings of various purchasing personnel. Going over details of a likely project are, left to right, Norbert Wiesnet, Purchasing Agent; Fin Jensen, Purchasing Agent, MRO Supplies; Mr. Ruediger; and Charles Maurer, Assistant Director of Purchases.

orders combining quantity requirements from all cafeterias.

COAL: Purchasing's part in reducing coal costs by \$36,000 a year is such an excellent illustration of the methods and spirit of Carrier's cost reduction program that it can be treated at some length.

Requisitions and specifications for coal purchases had been handled exclusively by the chief power house engineer and representatives of the plant engineering department. Mainly because the purchasing department did not have an adequately trained buyer who could discuss coals intelligently with the plant engineering personnel, it merely issued purchase orders in accordance with requisitions received.

When coal buying was made an object of the cost-reduction drive, Finn H. Jensen, purchasing agent in charge of maintenance, repair and operating supplies was given the assignment of "finding out what the coal business was all about and what our requirements for coal should be."

He tackled this formidable job by obtaining and studying the best available information on coal and coal markets, in the form of books, manuals and technical reports. Then he visited both power houses and became entirely familiar with the type of boilers and coal handling equipment. A plant engineering representative was assigned to him and cooperated fully in helping him to understand the reason for staying within certain specifications. A

third step was to obtain from plant engineering a complete set of coal specifications.

Inquiries were sent to 15 coal sales organizations, including the current supplier, who were judged capable of supplying coal that would meet Carrier's maximum and minimum specifications. They were asked to submit coals they would consider most suitable for the company's equipment (which was completely described.) They were asked to answer in full detail a set of questions on prices, freight rates, carriers, mine capacity and location, cars available per day, and thorough description of the preparation of the coal. In addition, they were requested to submit independent laboratory reports with their bids on various specifications on an "as received basis."

After all bids were received, Carrier had a total of 39 different coals to be considered. From this group plant engineering selected eight coals to be tested, based on the figured costs per million BTU. Purchasing placed test purchase orders for coals to be tested in accordance with a schedule set up by plant engineering. Of special interest was the fact that none of the coals as quoted by the regular supplier was selected.

Testing of all coals selected should be completed by late summer of this year. Meanwhile the regular supplier has reduced prices several times to a total of 90 cents on a ton. It is felt that some of this would have taken place due to competition,

but it is clear that the possibility of increased competition also helped.

Purchasing's aim is to create a healthy competitive condition between two reliable coal sales organizations, both equipped to give the type of product and service the company demands. In addition to the \$36,000 already saved, there is full understanding and cooperation between purchasing and plant engineering on the types of coals that can and cannot be bought. Purchasing is constantly watching the markets and is now adequately trained to understand all factors that go into negotiations with coal suppliers.

Where Value Analysis Builds

It's on this foundation of buyer initiative and training that Mr. Ruediger is building his value analysis section. His aim is to enable buyers to develop their own capabilities and skills to the fullest, with the official cooperation and guidance of the central purchasing staff.

Broad, practical experience has been brought into the value analysis set-up by B. K. Lees, who heads up the division in the central staff with the title Purchase Analyst. As the value analysis section is expanded, Mr. Ruediger hopes to have available additional personnel similarly trained and experienced both in production work and buying. They will be placed in the operating divisions where they will also do both advisory and original work on cost reduction projects.

Mr. Lees started with Carrier as a floor expeditor in a special order shop. After a couple of promotions he became material control manager for the shop. He was later transferred to a machine shop and then the press shop in charge of dispatching and expediting, where he made a practice of studying various machines and actually operating them. He was then transferred to purchasing and became a combination expeditor and assistant buyer in the subcontracting division. Mr. Lees later became buyer and assistant to the manager of the department.

For approximately six months, he was with another manufacturer as



Checking the finish on aluminum fin stock used in making coils for Carrier's room coolers are, left to right, Theodore Hughes, Manufacturing Manager, Unitary Equipment Division; Raymond Whiting, Purchasing Agent of the division; and Mr. Ruediger.

production and material control manager for the sheet metal fabrication, tool and machine shop, and bronze and aluminum casting divisions. He returned to the subcontracting division of purchasing at Carrier, and later became manager. He was assigned as buyer on a new project of the company and spent approximately two years at it. He was transferred to the non-productive division of the purchasing department and remained there until the reorganization. Now as purchase analyst he has both practical training and education in machine shop and press shop practice, sheet metal layout, mechanical drawing, and machine and tool design. In addition to his practical buying experience, Mr. Lees has had university extension courses in marketing, purchasing, production engineering, and inventory control. He has also taken Carrier's own courses in blueprint reading and inspection.

Three typical case histories point up the methods of the Carrier value analysis section and the type of results that can be expected from it:

MILLING CUTTERS: The general superintendent of the machining department in Carrier's high production division called the value analysis section in regard to a special type of milling cutter he had developed with his tool engineers. The object was to find a suitable tooling company to manufacture a single run of these cutters at the best possible price. Tooling engineers of three large manufacturers were called in by purchasing and were shown what work the cutter would have to perform. They were given drawings and asked to submit quotations and analyses.

Upon receipt of the quotations and analyses, the purchase analyst and superintendent made a choice and a formal order was placed. Results expected from the cutter are: increased production through efficient performance at a faster feed and speed; simplification and reduction in the set-up time required to change cutters; simplification and reduction of number of regrinds for the tool; overall substantial cost reduction both for the cutter and replaceable cutter blades.

As important as any specific cost reduction, however, is what it means to purchase analysis and to the ultimate success of any cost reduction program. "A situation like this," says Mr. Lees, "gives the purchase analyst an excellent opportunity to work in conjunction with the manufacturing superintendents and the tool engineers. It also gives him a direct knowledge of ways and means to effect cost reduction through direct personal contact."

BLANKET ORDERS: A buyer of hand powered tools informed the purchase analyst that orders for replacement and spare parts on three major brands were running into what appeared to be excessive volume. Mr. Lees surveyed the situation and found that in the preceding fiscal year, 2585 separate orders had been placed with the three suppliers, with each containing from one to 60 items.

An arrangement was made with the distributor to establish a single blanket order and a single release form to be issued against the order by the perishable tool stores section for replacements and spare parts as needed.

The system is now functioning, and the buyer has been relieved of

placing this large number of orders. The accounting and receiving departments have only three purchase order numbers to account for rather than 2585. In any future survey, the purchase analyst can gather all necessary information by reviewing three blanket orders rather than going through large files. The blanket order system has also aided tools stores in its expediting since there is only one order with each vendor to be checked.

INVENTORY REDUCTION: When a study showed that one department had accumulated a surplus of approximately 34,500 troy ounces of cadmium-free silver solder and was anxious to dispose of it, the purchase analyst studied the specification sheet on the commodity and got in touch with material control men of other Carrier departments. He found that this type solder was used in other departments at the rate of about 8 to 10,000 ounces a month. By negotiating with the materials specifications sections, he found that the surplus silver solder could be substituted for one in use in another department. Thus the surplus inventory was transferred from an inactive status to an active one.

These examples show how value analysis at Carrier is already beginning to operate, despite the fact that reorganization and personnel problems have not permitted the program to be carried out to the fullest extent possible. By the beginning of the next fiscal year, Mr. Ruediger expects, value analysts will be working not only in the central staff but in each operating division's purchasing department.

Meanwhile, the "value analysis mentality" is cultivated and promoted enthusiastically. While study is going on on various aspects of the problem—for example, whether or not to have purchase analysts for both productive and MRO operations—the cost reduction drive continues. "Our goal this year," says Mr. Ruediger, "is a cost reduction of \$1,500,000—or 2% of our gross annual purchases." How well he and his department are carrying out this mission can be judged from the special statement contributed to this "Purchase for Profit" issue by Cloud Wampler, Carrier's president. "During the first four months of the current fiscal year," according to Mr. Wampler, "our purchasing department made a notable contribution to lower costs . . . Specifically, the savings amounted to 3.6% of total purchases."

Run-in and test of hermetic compressors is done in batches of 150 units.



Tested Ideas for Value Buying

Where and How to Look for Greater Value:

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Additional Cost Saving Case

Histories Begin on Page 202

For More Information on All Items Use Inquiry Card — Page 17

Where and How to Look for Greater Value

A Check List to Help the Industrial Buyer "Purchase for Profit"

In Our Basic Approach

	Yes	No
Have we started a definite program of value buying?		
Do we understand the function of every material and service we buy?		
Do we regularly review purchased items to make sure their original functions are still necessary ones?		
Are we knowingly paying more than full value for any items without attempting to take corrective action?		
Are we alert to new developments which can fulfill existing functions more efficiently and at lower cost?		
Are we constantly looking for new materials and processes which will perform as well at lower cost?		
Do we know enough about our company's products and markets so that we can contribute our specialized knowledge toward the common goal?		
Are we making full use of the ideas and sound thinking to be found in local and national purchasing meetings?		
Have we asked colleagues in other companies for ideas and suggestions on doing a better buying job?		
Are we using professional and technical publications as a source of new ideas and policies?		
Do we welcome constructive suggestions from other members of our organization?		

In Our Purchasing Policies and Methods

	Yes	No
Have we analyzed our quantity requirements in relation to optimum order size—considering price, obsolescence, and inventory carrying costs?		
Do we review each requisition to make sure inventories will not grow too big and too expensive?		
Do we weigh the good and bad points of stocking repair parts and maintenance items in preference to ordering as necessary?		
Are we controlling our inventory by type and value of item, usage, and physical size, and relating it to company sales targets?		
Are we up-to-date on possible substitutions for materials that might again become tight?		
Do we question special requisitions and find out why a standard material cannot be used?		
Have we considered the pros and cons of standardization of office and maintenance supplies?		
Have we thought of duplicating some of our own forms instead of buying them printed?		
Are we both prompt to service emergency requisitions and prompt to correct unnecessary "emergencies"?		
Have we thought of trying to evaluate scientifically the merits of competing brands?		

	Yes	No
Are we thoroughly investigating the cost reduction possibilities of buying parts unassembled instead of assembled, or vice versa?		
Have we carefully classified purchased items as to relative importance to find out how much purchasing effort is justified.		

In Our Own Plant and Product

	Yes	No
Are we constantly abreast of manufacturing and quality problems in our own plant? Do we try to make active contributions to cost reduction efforts?		
Are we making any items in our plant which can be bought at lower cost from outside specialist suppliers?		
Are we buying any items which it would be better to make in our own plant?		
If a product can be made by several processes (e.g., machining from bar stock, or machining castings or forgings), are we always certain that ours is being made by the most economical method?		
Are we alert to new developments in the equipment field which may reduce internal manufacturing costs or permit us to buy parts at lower cost?		
Are we aggressive in promoting new tools and manufacturing aids which might reduce costs?		
Are we prepared to make our specialized procurement knowledge available when new products are still in the design stages?		
Are we promoting standardization in design and trying to limit the number of special or unique parts required?		
Are we always looking for design changes which would permit purchased parts to be made on high speed, automatic equipment?		
Do we carefully review engineering changes on purchased items to make sure that value and price are equal?		
Do we plan our purchases so as to have the least possible waste of material, using offal when possible, etc.?		
Are we aware of cost savings which can be made through use of salvage materials?		

In Dealing With Our Suppliers

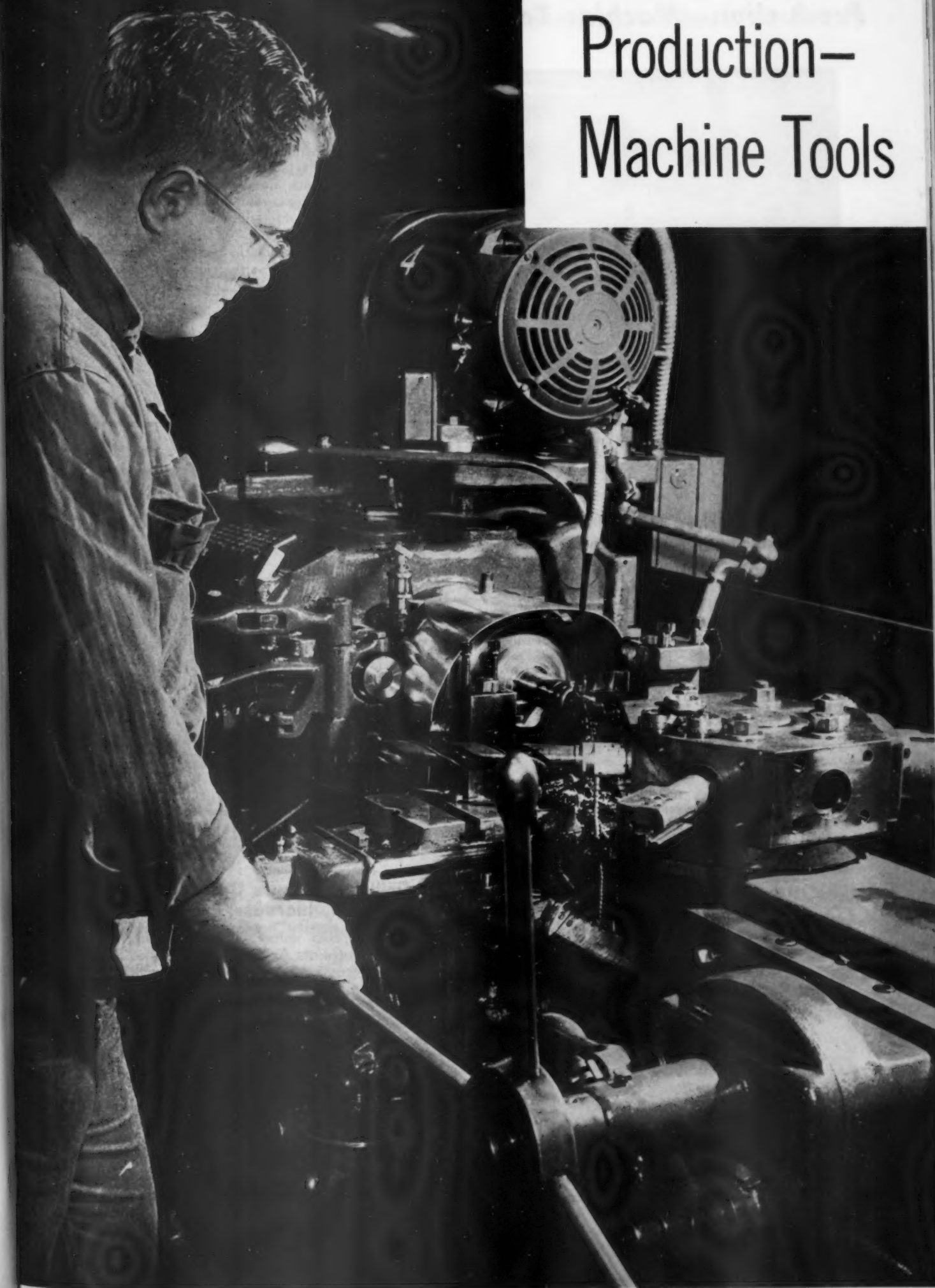
	Yes	No
Are we making full use of legitimate competition in selecting sources?		
Are we familiar with manufacturing processes involved on parts we buy?		
Do we review the equipment and methods of suppliers to make certain our parts are made in the lowest cost way?		
Do we actively seek sources with specialized equipment who can most economically handle our needs?		
Are we making full use of the specialized engineering and product know-how of our suppliers?		
Do we encourage and promote cost reduction suggestions from our suppliers?		
Are we certain that every individual manufacturing operation performed on a purchased part is essential to the functioning of that part?		
Do we study parts before asking for quotations so we can set up informal price objectives?		
Are we getting the full benefits of reductions in commodity prices or labor costs (elimination of overtime, greater productivity, etc.) that should be reflected in our parts prices?		

	Yes	No
Do we accept price increases without thoroughly analyzing the cost factors that go into the increases?		
When special tooling is required, do we carefully evaluate its cost as well as cost of the part when selecting a source?		
Do we weigh the pros and cons of single vs. multiple sources when making the purchase?		
Do we consider the advantages of making broad, long range commitments for certain items so as to permit suppliers to tool and equip their plants in the most efficient manner?		
Do we increase costs by demanding special services and accommodations from our suppliers?		
Do we work toward building supplier quality standards to reduce our internal quality control expense?		
Do we consider the economical operation of a supplier's plant when scheduling?		
Are we always receptive to possible new suppliers who may have developed lower cost methods and techniques?		
When introducing a new supplier, are we certain he knows any unwritten "ground rules" which may exist with respect to quality, quantity or price?		
Do we, in general, treat suppliers as members of a team working toward a common goal?		

In Checking Related Costs

	Yes	No
Have we kept up with developments in packaging and materials handling? Have we promoted cost-saving techniques in these fields?		
Have we tried to improve supplier packaging to reduce handling costs in our own plant?		
Do we know what we are paying for packaging of incoming shipments? Are we actively working to reduce this cost?		
Have we considered packaging incoming shipments in containers which can be re-used for outgoing shipments?		
Have we analyzed the merits of expendable pallets and containers?		
Do we know what it costs to handle various types of containers and pallets in our plant?		
Do we encourage adoption of latest materials handling techniques in our plant?		
Do we consider freight cost when reviewing quotations preliminary to buying?		
Do we know the advantages of shipping in car or truck load lots and have we thought of doing this by pooling shipments from several suppliers?		
Have we analyzed our freight costs to make certain we are using the cheapest means of shipment?		
Do we consider demurrage charges when scheduling incoming shipments?		
Do we know the occasional advantages that can be obtained by special freight classifications, mixed shipments, etc.?		
Do we know what it costs to carry our inventory? Are we doing everything possible in respect to scheduling and lead time to keep the most advantageous position?		
Are we throwing away any scrap or waste materials that can be sold?		
Are we making our organization conscious of the need to properly handle and segregate scrap and waste to secure top prices?		
Have we thought of installing baling and other scrap handling equipment to cut costs and permit us to bet the highest prices for scrap and waste?		

Production— Machine Tools



Production—Machine Tools



Automatic Feed Relieves One Man; Steps Up Production 25%

Taylor Instrument Co., Rochester, N. Y. replaced the pusher type feed tube on an automatic screw machine with an automatic loading bar feed. To turn out maximum production with the manual feed finger method the screw machine had to be tended by an operator and an apprentice. Installation of the automatic bar feed dispensed with the apprentice and at the same time stepped up production of stem rods on the automatic screw machine by 25%.

CIRCLE NO. 40 ON INQUIRY CARD—PAGE 17

Safe-Torque Driver Cuts Tap Breakage Up To 50%

Tap breakage was reduced as much as 50% at The Caterpillar Tractor Company's Joliet plant through the use of a safe-torque tap driver. It increased production and operator efficiency. It also improved accuracy and finish and reduced over-all tapping costs. The driver features adjustable torque and a full-releasing roller drive.

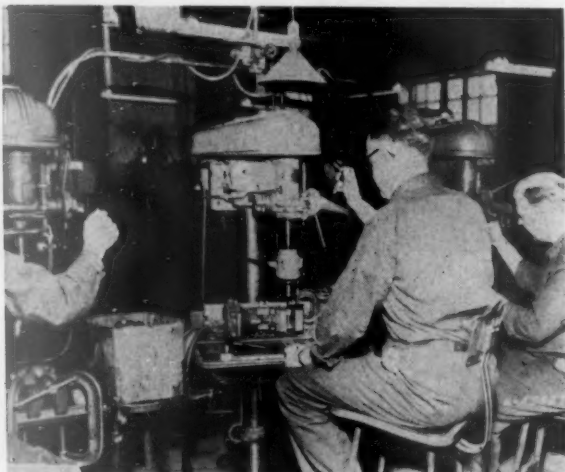
CIRCLE NO. 41 ON INQUIRY CARD—PAGE 17



Drill Press Units Cut Labor Costs 50%, Increase Production

Three drill press units help Titan Tool Co., Fairview, Pa., turn out 90% of stud-setting equipment for the country's automotive and aviation industries. The drill presses are run constantly on a variety of drilling, tapping, reaming and counter-sinking operations with virtually no maintenance. After several years of operating these units, the company estimates it has been able to cut labor costs 50% and speeded up production another 50%.

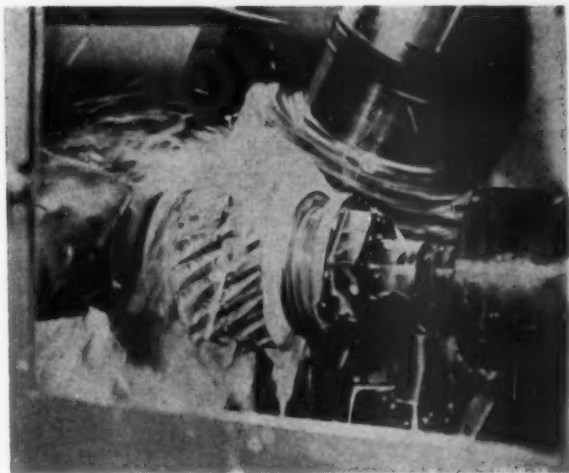
CIRCLE NO. 42 ON INQUIRY CARD—PAGE 17



Cutting Fluid Increases Hob Life, Cuts Down Time

A major automobile manufacturer used three nationally recognized cutting fluids on a speed gear hobbing operation. The best of the three solubles tested increased hob life 60.5% over the second best soluble and 81.6% over the third best. In addition to the increased tool life machine downtime was substantially reduced due to the increased production per sharpening of the hob.

CIRCLE NO. 43 ON INQUIRY CARD—PAGE 17



Punch Equipment 4 Times Faster; Speeds Laying of Rails

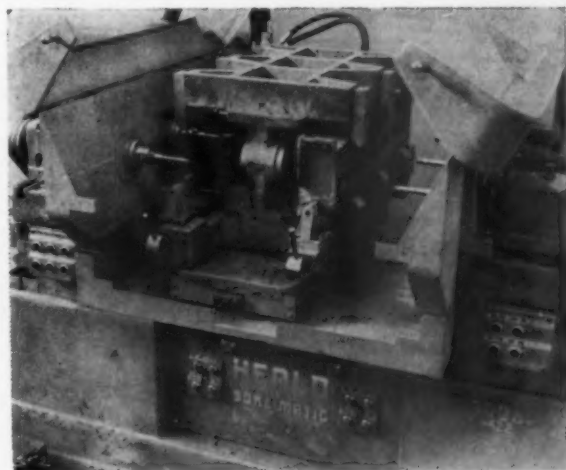
At the Navy's Camden, Ark., ammunition depot cartridge-actuated punch equipment makes holes in rail web at a rate 4 times faster than older methods. No skilled labor is needed, and holes are always true. The entire job of punching one hole—positioning the velocity-power rail punch, inserting a blank cartridge and removing the "slug"—requires about 8 minutes.

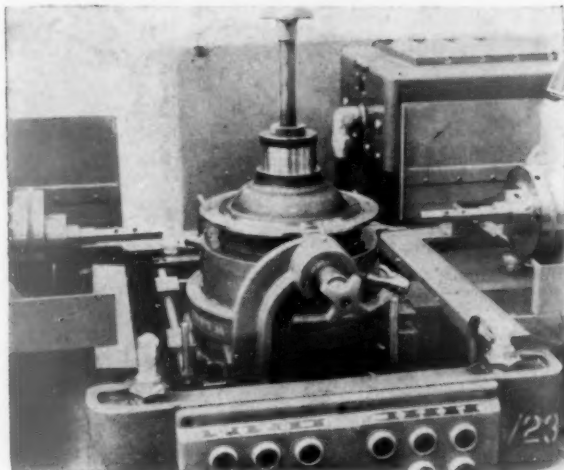
CIRCLE NO. 44 ON INQUIRY CARD—PAGE 17

Automatic Machine Doubles Production On Cylinder Heads

A large manufacturer installed an automatic boring machine which bores the guide bushing holes, plunges the valve seat or c' bores insert holes in four different cylinder heads. This particular machine is positioned in the manufacturer's plant so as to tie in with a conveyor line system. The company reports that production has nearly doubled over previous methods of processing.

CIRCLE NO 45 ON INQUIRY CARD—PAGE 17





Boring Machine 75% Faster Than Previous Method

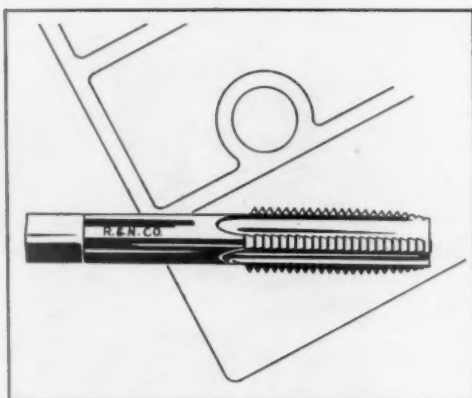
A manufacturer installed an automatic boring machine to finish four half-holes in one of over a dozen similar mating parts of different sizes. Tooling approaches the work from either end of the machine simultaneously. After two opposing holes are bored, the work is indexed in the fixture at 90° to present two more opposing holes to the tooling. The machine produces these mating differential cases 75% faster than other methods.

CIRCLE NO. 46 ON INQUIRY CARD—PAGE 17

Crib Control System Saves \$2500, Ends Production Delays

Replacing its own tool check system with a modernized crib control system paid a big return in Precision Castings Company's die shop in Syracuse, N. Y. A great effort has been made to control tools with the company's own system but production delays were frequent and tool expense high. When the crib control system was installed, approximately \$2500 worth of end mills alone were recovered from machines, tool boxes and benches. Monthly tool purchases dropped and downtime from missing tools stopped.

CIRCLE NO. 47 ON INQUIRY CARD—PAGE 17



Threads Per Tap, in Cored Holes, Increased Up to 20 Times

At Newton Industries, Inc., West Haven, Conn., a change to free-cutting $\frac{1}{2}$ "-20 + .004 bottoming taps increased production from about 2500 holes per tap to an average of 31,000 holes per tap. High was over 50,000. These figures, all before regrinding, refer to cutting threads in the hard surface of $\frac{3}{8}$ " long cored holes in aluminum and zinc die castings. Other benefits include: ending of clutch and electric motor failure, use of only 4 tapping machines instead of 6.

CIRCLE NO. 48 ON INQUIRY CARD—PAGE 17

Tool Board Saves 40% In Setup Time, Speeds Production

A special tool board provides an improved, more efficient system for replacing tools on transfer-type and other multiple spindle machines. For example, with a complete set of 56 newly sharpened drills and reamers ready to replace broken or worn tools instantly, setup time on a Footburt 6-station center column drill was reduced 40% and production was increased by 63 additional parts every eight-hour shift.

CIRCLE NO. 49 ON INQUIRY CARD—PAGE 17



Circular Chaser Tap Reduces Threading Time By 75%

Baker Oil Tools, Inc., of Los Angeles, Calif., reports that a special circular chaser tap mounted on a Stamet's vertical tapping machine has reduced threading time 75%, tapping 6 $\frac{3}{8}$ " to 13 $\frac{3}{8}$ " diameter threads in casing shoes. This tap, as used at Baker, is designed for use on production tapping machines to thread line pipe, casing and drill pipe couplings. It cuts 3/16", 3/8" or 3/4" tapered threads.

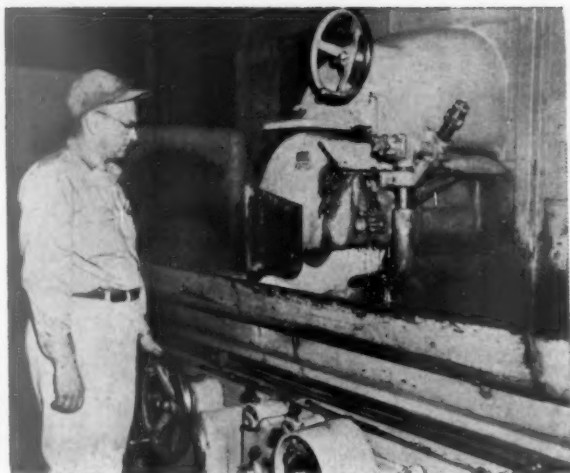
CIRCLE NO. 50 ON INQUIRY CARD—PAGE 17

Belt Grinder Gives 10 Times Production By Hand Methods

An operator is shown here using a portable belt grinder to remove flash from the sindie of the headlight opening of a Chevrolet Corvette auto body—made of glass fiber reinforced plastic. The grinder uses 80-grit silicon carbide waterproof cloth. The grinder has increased the production rate 10 times over the previous hand sanding method. Improved surface finish and uniformity are also advantages, since components are joined to the body with adhesives, and close fits are required.

CIRCLE NO. 51 ON INQUIRY CARD—PAGE 17





Manufacturer Gets 40% More Wheel Life At 12% Less Cost

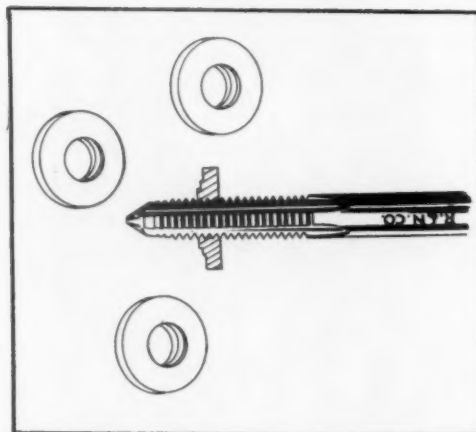
A Michigan manufacturer uses new vitrified bond wheels for grinding laminated stainless steel and mild steel magnetic chuck plates. He reports the wheels have given 40% more wheel life. In addition, they cost 12% less, since premium priced abrasives are no longer needed.

CIRCLE NO. 52 ON INQUIRY CARD—PAGE 17

Production Per Tap Goes From 40,000 to 250,000 Threads

With a supplier's engineer's assistance, Penn Engineering and Manufacturing Company, Doylestown, Pa., was able to increase production and improve size control substantially. In one instance, nut production from an 8-32 3-flute plug tap passed 250,000. This is more than 6 times the production previously obtained.

CIRCLE NO. 53 ON INQUIRY CARD—PAGE 17



Flexible Shaft Machine Doubles Output Of Freon Receivers

Brazing the seam of freon receivers at Governair Corp., Oklahoma City, Okla. is a delicate job, since they must be free from leaks. Before brazing, the connection is "veed" out using a grinding wheel at 3450 rpm. After brazing, the seam is ground and wire brushed both inside and outside at 3450 rpm. A flexible shaft machine was used to replace a heavy portable electric grinder which was fatiguing and impossible to maneuver in tight spots. Fatigue has been reduced, output of receivers has doubled, and there have been no maintenance problems.

CIRCLE NO. 54 ON INQUIRY CARD—PAGE 17

New Tube Bending Technique Saves \$14,000 Per Plane

A large aircraft manufacturer is saving \$14,000 per plane using a new tube bending technique. The new methods make possible, for the first time, high quality, unusually small radius bends in lightweight, thin-wall stainless steel tubing. Previous drop hammer forming methods have been eliminated.

CIRCLE NO. 55 ON INQUIRY CARD—PAGE 17



50% Machining Time Saved

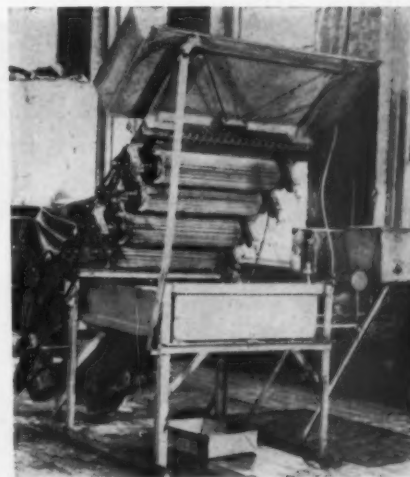
In its Athens, Pa. plant, Ingersoll-Rand found it could save 50% of the machining time required to produce parts for its reciprocating air hammer. Using a lathe, four diameters were turned on the riveting hammer barrel. The lathe could also be used for recessing and forming ball tracks on the hammer. The riveting hammer barrel is turned from SAE 8620 steel.

CIRCLE NO. 56 ON INQUIRY CARD—PAGE 17

New Machine Boosts Hat Output; Reduces Labor Cost By 75%

For years, men's hat makers treated rabbit fur in an acid felting solution by means of a hand operation. A new machine using acid-resisting brushes works the pelts against the brushes. After one year two girls were running an average of 20,000 pelts through the machine in an 8-hour day, at a cost $\frac{1}{4}$ that formerly paid a crew of hand workmen.

CIRCLE NO. 57 ON INQUIRY CARD—PAGE 17



Production—Machine Tools



Doubles Production Rate With Semiautomatic Grinding Machines

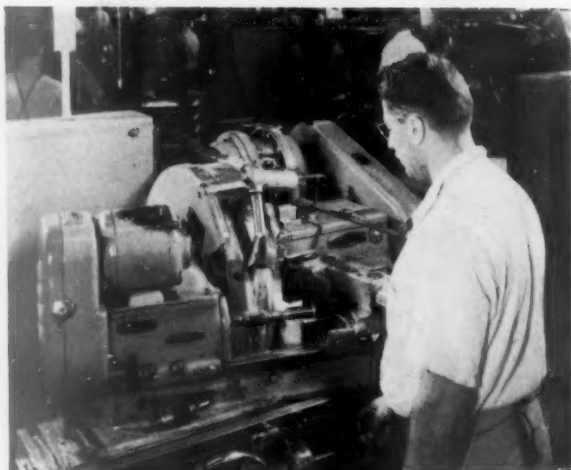
The Jacobs Manufacturing Company switched from separate operations to a single operation on semiautomatic grinding machines in producing its famous Rubber-Flex collets. As a result, the production rate was doubled. Jacobs reports similar production savings in grinding chuck bodies on the same type of machines.

CIRCLE NO. 58 ON INQUIRY CARD—PAGE 17

Grinding Wheel Life Up 300%; Wheel And Labor Costs Down

A new grinding wheel made with a fine loose abrasive embedded in pellet form throughout the wheel is being adopted as standard by many companies where the grinding of carbide tools is a serious cost factor. A large eastern manufacturer reports that its use has increased wheel life 300%, and decreased both wheel and labor cost. Flow of loose abrasive between metal and the wheel permits main body of the wheel to be harder than is normally used for grinding carbides.

CIRCLE NO. 59 ON INQUIRY CARD—PAGE 17



Lathes Replace Boring Mills; Machining Time Reduced 43%

The Solar Aircraft Co., San Diego, Calif., expanded the capacity of its plant, which was already operating at capacity, without adding a single square foot of space. The major contributory factor was the replacement of vertical boring mills with T lathes. By their use a 36" diam. flange, which required 283 minutes to machine, now only requires 161 minutes. This is a saving of 43% in time alone. In addition, the lathes occupy less space and save on capital investment.

CIRCLE NO. 60 ON INQUIRY CARD—PAGE 17

Machine Replaces Department

An entire department was eliminated in an eastern metal working plant by the installation of a transfer machine which processes various differential carriers and accomplishes all the work done previously by several machines and operators. The unit takes the raw cast carriers, roughs and finishes them and then completes rough-and-finished boring and facing operations as well as drilling and tapping.

CIRCLE NO. 61 ON INQUIRY CARD—PAGE 17



Cuts Keyway Cutting Cost By 70 to 90%

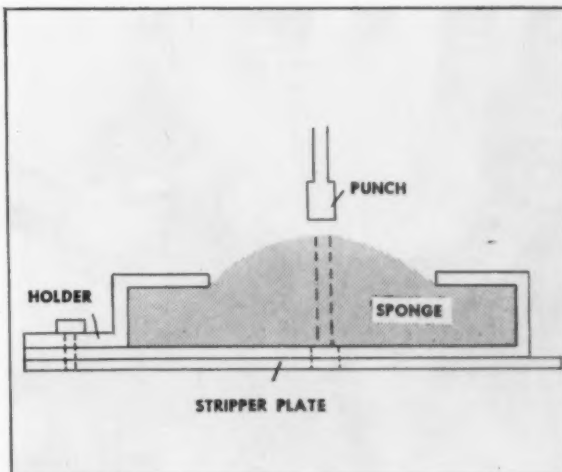
The need for a skilled mechanic to cut keyways was eliminated by the Philip Morris Co., Louisville, Ky. Previously a shaper was used. Now anyone in the shop can cut keyways as needed in their spare time with high speed steel keyway broaches and an arbor press which provide all keyway sizes from 1/16" to 1". Cutting cost has been reduced 70 to 90%.

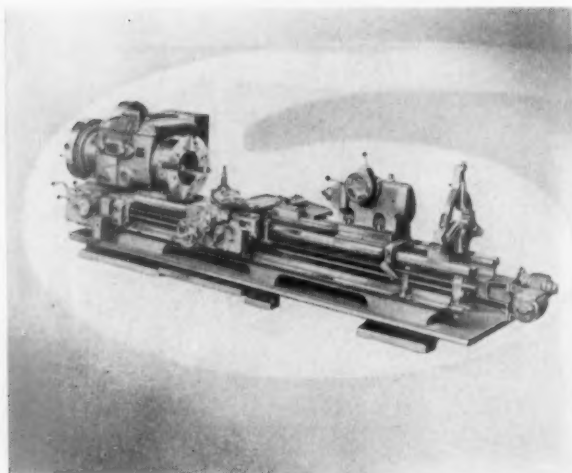
CIRCLE NO. 62 ON INQUIRY CARD—PAGE 17

Punches Last 3 Times Longer With New Lubricating Method

A midwestern manufacturer had trouble in lubricating a 300-ton gang punch, used to punch 1/2" holes in 3/16" steel plate. He switched to a soluble oil-water mixture and found that he could run 14 sets of holes before it became necessary to relubricate. With his old lubricant he could punch only two sets of holes before having to relubricate the punches. Still better performance resulted from use of cellulose sponge to keep holes clean. Punches lasted two weeks instead of only 3 operating days.

CIRCLE NO. 63 ON INQUIRY CARD—PAGE 17





Hollow Spindle Lathe, Special Tooling Cut Machining Time 25%

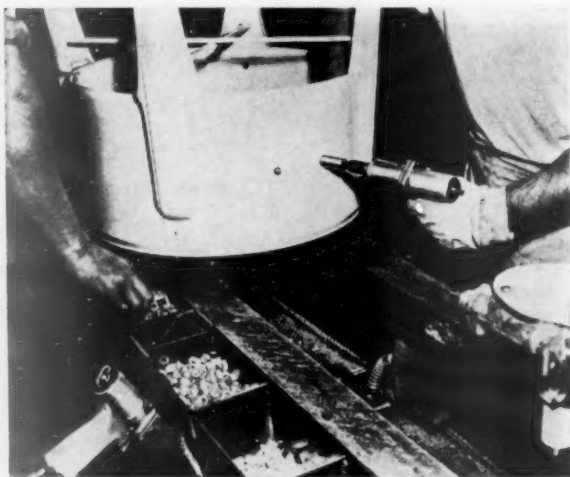
Bucyrus-Erie, power machinery manufacturers, were faced with the problem of chasing the thread on the tapered end of an oil well drill bit. There is no run-out neck; the thread has to come right up to a 90° shoulder. By combining a hollow spindle lathe with special tooling, the machinery manufacturer solved the problem and saved 50% of the time formerly needed for machining.

CIRCLE NO. 64 ON INQUIRY CARD—PAGE 17

Coolant-Lubricant Saves Over \$15,000 Annually

By using a fortified water-soluble cutting base as both coolant and lubricant in 15 automatics, a Cleveland company estimates it saves about \$100 per month per machine. Used 1 to 20 with water, the coolant replaced a 35¢ per gallon straight cutting oil. The same dilution is used for lubricating the National Acme Automatics and machining 52100 steel.

CIRCLE NO. 65 ON INQUIRY CARD—PAGE 17



\$1240 Invested; Savings In First Year Alone Total \$15,500

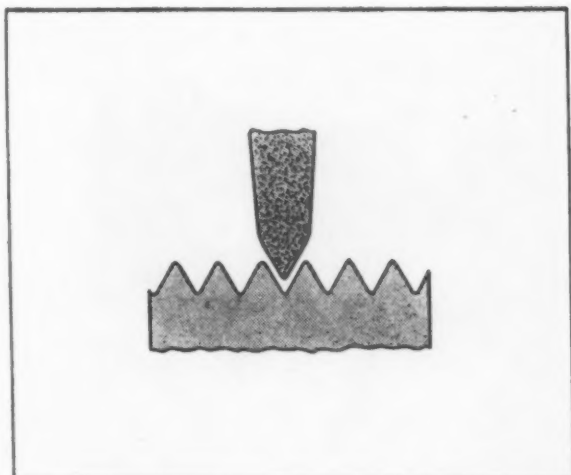
A large fabricator of metal products installed air-driven screw drivers. An analysis by his own time study men shows that this \$1240 investment saved \$15,500 in the first year alone.

CIRCLE NO. 66 ON INQUIRY CARD—PAGE 17

Rejects Reduced; 25% Increase In Production

A portable tool manufacturer installed an automatic boring machine for turning out impact wrench housing. Number of rejects coming from the machine have been reduced to a bare minimum. Surface finishing has been substantially improved and production has been increased 25%. Accuracy of mating has been so improved that there is virtually no need for selective assembly of bored parts.

CIRCLE NO. 67 ON INQUIRY CARD—PAGE 17



Oil Compound Reduces Costs \$280 Per Year On Each Machine

Cutting oil ran so hot on a thread grinding operation that after a few hours the size tolerance could not be held, threads were burned and wheel cost was excessively high. Selection of an oil compound for the job enabled the company to hold tolerance uniformly, and thread burning was ended. Wheel life was extended 50%, and carry-off of oil was reduced from 5 to 3 gallons per day. Savings were \$280 per year on each machine.

CIRCLE NO. 68 ON INQUIRY CARD—PAGE 17

Production Increased 13 Times By Rotary Tube Straightener

After installation of a rotary straightener in the Niagara Falls, N.Y., plant of Bell Aircraft Corp., volume of straightening 3/16" stainless steel tube climbed from 575' to nearly 7500' per day. In addition, the manufacturer was able to handle tube in longer lengths and to secure precision straightening to meet specifications for only .003" per foot deviation from perfect straightness.

CIRCLE NO. 69 ON INQUIRY CARD—PAGE 17





Foundry Gets 85% Time Savings Through Use of Core Blower

Continental Foundry, Chicago formerly allowed 28 minutes for blowing the 195 lb. core shown. This included hand-ramming, drawing, finishing and washing. By putting the box in a core blower, the time was reduced to almost 4 minutes—an 85% time saving. A special attachment to the core blower holds wear to such a minimum that core box maintenance is practically negligible.

CIRCLE NO. 70 ON INQUIRY CARD—PAGE 17

Packing Lasts Twice As Long

By installing a new type packing made of leather completely impregnated with synthetic rubber, an Illinois firm gets twice the packing life it obtained with regular cup and "U" packings. The packings are used in lead extrusion presses and seal hydraulic oil at 6000 psi, with operating temperatures ranging from 120F to 170F. The packing is very flexible and easy to install.

CIRCLE NO. 71 ON INQUIRY CARD—PAGE 17



Production Up 10-15%

A medium sized foundry has raised overall production of ash pits for warm air furnaces between 10% and 15% by using electric hand tools to run down the #20 thread bolts on the front of the pit. The tool saves 75% of the time in actual bolt-running and is credited with averting a production jam at peak periods of work.

CIRCLE NO. 72 ON INQUIRY CARD—PAGE 17

Scrap Loss Down, Production Up

Special application of an automatic air-operated gage with light signal control unit mounted directly on a centerless grinder used to finish outer bearing races has brought a number of advantages for a bearing maker. Tolerances must be held to .0003". As the races are fed from the machine, they are gaged continuously and automatically. As a result, rejects have dropped from 1.5% to as low as 0.59% per week; production has been increased up to 90 races per minute without sacrificing accuracy; the operator can correct the machine without stopping production.

CIRCLE NO. 73 ON INQUIRY CARD—PAGE 17



Saddle Type Turret Lathe Helps Boost Production By 50%

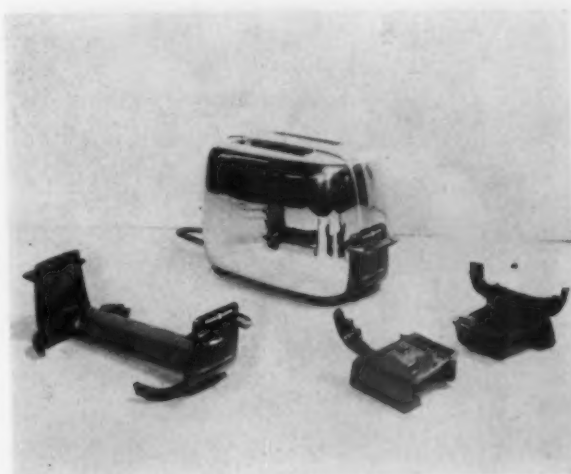
To machine the variety of surfaces on stainless steel landing nipples used in deep oil-well work, Otis Engineering Corp., Dallas, Tex., took the job off an old lathe. It was put on a modern saddle type turret lathe, with multiple tooling. An immediate production increase of 50% resulted.

CIRCLE NO. 74 ON INQUIRY CARD—PAGE 17

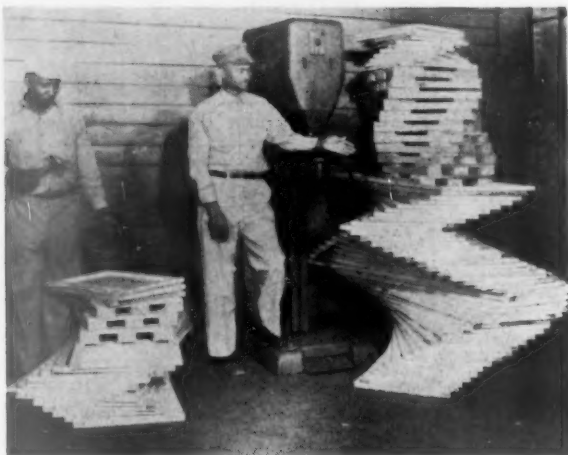
Automatic Plastic Molding Presses Drop Labor Costs 80%

A switch from semi-automatic to fully automatic molding presses in making toasters has resulted in 80% lower molding labor costs for General Electric's Housewares Department, Allentown, Pa. Although the base of the toaster had to be redesigned, producing the plastic components, which consist of two end plates, on an automatic 50-ton straight ram compression press cut time while maintaining production. Two presses required only 1/5th of one man's time to operate as against one operator per press full-time under the old setup.

CIRCLE NO. 75 ON INQUIRY CARD—PAGE 17



Production—Machine Tools



Automatic Nailing Machine Ups Shipping Container Output 300%

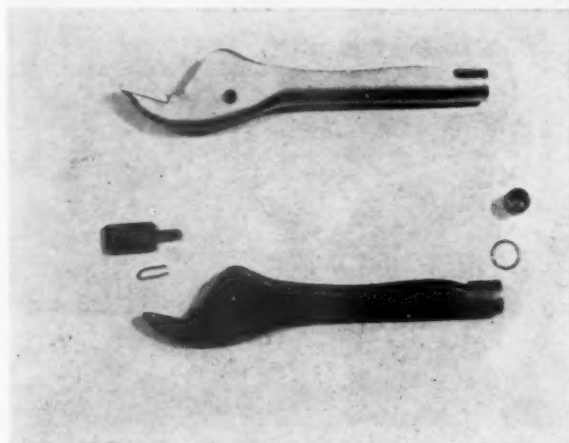
An increase in output of more than 300% in making wooden shipping containers was realized by an Atlanta, Ga., company through the use of an automatic nailing machine. Actual tests showed the machine was producing four containers as compared to one by the old hand method in an equal period of time. The skid part of the container was being turned out in 45 seconds with the automatic nailer while hand nailing called for four minutes under the best conditions.

CIRCLE NO. 76 ON INQUIRY CARD—PAGE 17

Carburizing-Brazing Treatment Checks Rejects By 50%

A combination carburizing-and-brazing treatment has reduced rejects by 50% for Metal Engineering Co., Plano, Ill. Previously, the heat treatment of 400 assemblies per hour (wrenches, pliers, etc.) allowed a range of hardness of critical jaw piece from 30 to 51 Rc with many rejects. The new equipment, with less rejects, allows control of hardness to between 48 and 51 Rc. In addition, the cost of heat treatment, brazing, finishing and assembly with overhead was reduced 51%.

CIRCLE NO. 77 ON INQUIRY CARD—PAGE 17



New Grinding Wheels Cut Lathe Maintenance Costs By 1/3

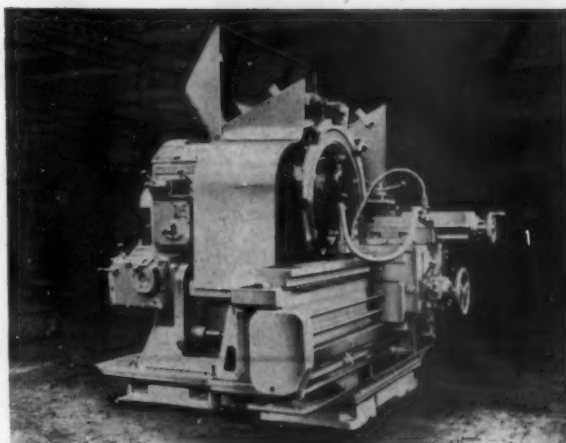
Cost of maintaining carbide lathe tools in top condition has been cut about one-third by Olin Industries, Inc., at its Winchester operation in New Haven, Conn. Grinding wheels with new bond ingredients cut cool and free and outlast wheels previously used. In addition, the ability of the new wheels to grind steel shanks as well as carbide has eliminated double grinding.

CIRCLE NO. 78 ON INQUIRY CARD—PAGE 17

**Lathe Slashes Machining
Time From 33½ To 5½ Mins.**

The Hotpoint Company, Milwaukee, Wis., cut the machining time required to contour face and bore a supercharger diffuser from 33½ minutes to just over 5½ minutes. This saving of over 86% in time was effected by using a new lathe. The plant manager estimated that the annual savings on this single part were \$968 and five other parts are machined on the lathe.

CIRCLE NO. 79 ON INQUIRY CARD—PAGE 17



**Machine Saves 97% In
Threading Time**

Threading time on a specific job at the machine shop of Slaysman Co., Baltimore, Md., was cut from 2 hours to 4 minutes by means of a particular threading machine. It involved the cutting of a 1" diam 5 pitch Acme thread 29" long on C1141 to a class 3 fit. This reduction of 97% in threading time was effected by substituting the machine for original plan to generate the thread by milling.

CIRCLE NO. 80 ON INQUIRY CARD—PAGE 17

**2% Unit Cost Reduction With
Burnisher For Plastic Pieces**

Removing flash from plastic pieces has been reduced from a costly two-stage operation to a simplified one-stage method by the Westinghouse Electric Corp., Pittsburgh. A 2% reduction in unit cost is realized by using a glass-laminated burnishing wheel. Grooves are cut in the thick edge of the wheel with a carbide-tipped tool and it is in these grooves that the actual grinding and polishing is done. No distortion of groove occurs after operations.

CIRCLE NO. 81 ON INQUIRY CARD—PAGE 17



Production—Machine Tools



Beta Ray Meter Cuts Laboratory Work In Hydrocarbon Analyses

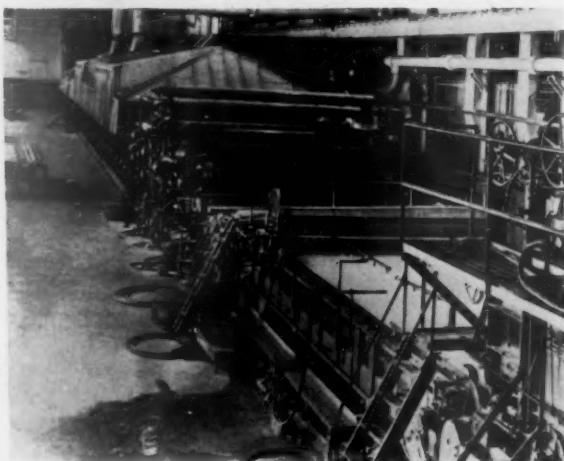
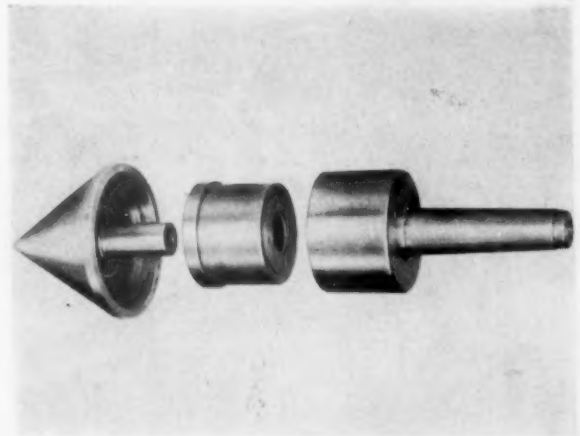
Determining the percentage of hydrogen in a hydrocarbon has been cut from a four hour operation with skilled lab technicians to a five minute cycle with a new instrument by an important petroleum industry company. Using an atomic by-product, the instrument measures the percentage hydrogen and H/C ratio in liquid hydrocarbons by a process that uses the absorption of beta rays. Beta ray meters give a statistical probable error of 0.02 weight per cent hydrogen—an increase in accuracy of more than 100% over lab methods.

CIRCLE NO. 82 ON INQUIRY CARD—PAGE 17

Live Centers Increase Output And Efficiency Of Old Lathes

Making old style lathes as efficient and productive as newer machines was solved by one manufacturer through the use of live centers using pilot bearing bushings. This way, the depth of the cut was increased 300% and cutting speed 55% on some installations. It also allows the use of carbide tools in older equipment and withstands heavy thrust loads while giving extreme precision. The live center also increases the capacities of late model equipment.

CIRCLE NO. 83 ON INQUIRY CARD—PAGE 17



Steam Turbines Up Paper Mill Production 12 To 13%

Northwest Paper Co., Cloquet, Minn., producing 175 tons of alkaline pulp and 100 tons of sulphite pulp per day, increased its production by 12 to 13% by installing two steam turbines to drive its paper machines. While some of the machines were limited due to their drying capacity, others had reserve drying capacity but were limited by speed. Hooking up the machines to the turbines not only increased their speed but also cut maintenance costs on power equipment as well as improving quality of product.

CIRCLE NO. 84 ON INQUIRY CARD—PAGE 17

Electrical Equipment





Part Hardening Boosted 1000% By Induction Heater

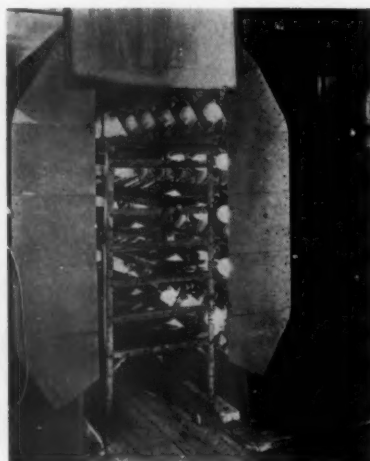
Hardening of textile machinery parts has been stepped up more than 1000% at the Whitin Machine Works, Whitinsville, Mass., through the use of a 50-kw electronic induction heater. The heater hardens bottom twister rolls at the rate of 35 an hour. Formerly the job was done by a cyanide furnace which took three and a half hours to harden eleven pieces. Also, absence of gases and atmospheric heat makes operators' jobs easier.

CIRCLE NO. 85 ON INQUIRY CARD—PAGE 17

Infrared Ovens Cut Drying Time From 24 Hours To 12 Minutes

Prior to the installation of infrared ovens it used to take Metropolitan Shoemakers, Inc., Chicago, Ill., from 24 to 36 hours for drying by natural air. This resulted in lasts being tied up at the crowning operation. Drying time is now reduced to 5 to 12 minutes, depending on styles and moisture content. Reduction in drying time has reduced the inventory in lasting department by hundreds of pairs.

CIRCLE NO. 86 ON INQUIRY CARD—PAGE 17



Overnight Job Done in 7½ Minutes By Infrared Heaters

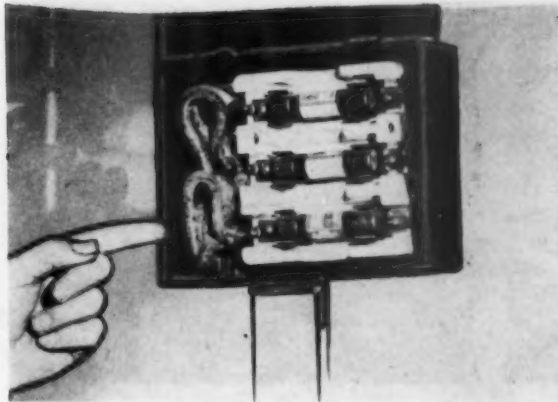
Ohio Steel Foundry of Springfield, Ohio, now dries silicone wash on molds for gear castings in 7½ minutes with far-infrared electric radiant heaters. This was formerly an overnight job. A single bank of 24 heaters, rated at 1.8 kilowatts each, is suspended over the conveyors carrying the molds. When not in use they are raised to the ceiling. Smoother gears are produced with less casting-cleaning labor.

CIRCLE NO. 87 ON INQUIRY CARD—PAGE 17

Fuse Cuts Motor Repair Bills

Commander Mills, Inc., Sand Springs, Okla., has a thousand looms in its plant. Prior to using a special type fuse to prevent motor burnouts, several hundred of the motors powering these looms had to be rewound each year. Using the new fuse, the number of loom motors needing repair annually has been cut to less than fifty. In 1949, repair costs were \$6804.00. For the first six months of 1953, they were only \$445.84.

CIRCLE NO. 88 ON INQUIRY CARD—PAGE 17



Radiant Heat Replaces Torch; Production Up 30%

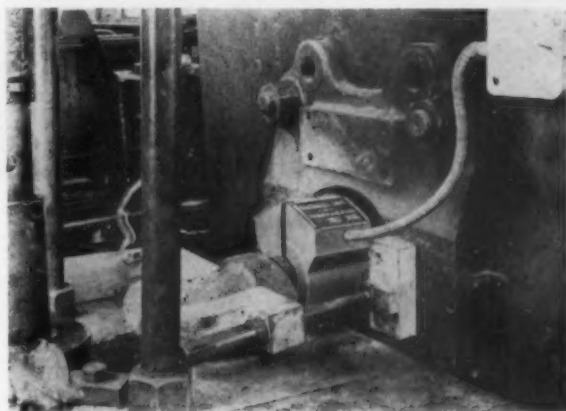
Far-infrared radiant heat is being used by Capital Airlines at Washington National Airport to do the precision job of installing "shrink-fit" parts in aircraft engines. Changing over from the former gas torch heating method not only does a more precise job but it also effects a 30% increase in assembly production and saves 25 man hours per week.

CIRCLE NO. 89 ON INQUIRY CARD—PAGE 17

Nozzle Heater Ends Shutdowns For Die Caster; Pays for Itself

A midwestern die casting company has completely eliminated shut-downs due to nozzle difficulties from freezing of die casting material in the nozzle at the end of the casting cycle. The solution was the application of a nozzle electric heater that gives close temperature control. The installation decreases the shot cycle sufficiently to more than pay for the equipment installation.

CIRCLE NO. 90 ON INQUIRY CARD—PAGE 17



Electrical Equipment



Electronic Induction Heater Steps Up Output 1000%

Hardening of textile machinery parts has been stepped up 1000% at the Whitin Machine Works in Whitinsville, Mass. through the use of an electronic induction heater. Formerly bottom twister rolls were hardened in a cyanide furnace at the rate of 11 pieces every 3½ hours. Now they are hardened at the rate of 35 pieces per hour. In addition, efficiency is improved through easier parts handling and the absence of gases and atmospheric heat.

CIRCLE NO. 91 ON INQUIRY CARD—PAGE 17

Electrical Testing Instrument Stops Power Failure Shutdowns

Testing and checking overload relays of various starters where repeated trip-offs occur, was a tedious, hazardous and often expensive proposition for a synthetic fibre company. Using a new electrical equipment testing instrument, the company eliminated "hot adjustment" procedures previously necessary. Since they operate on a 24-hour, 7-day week schedule, costly shutdowns due to power failures were an ever present danger which the new instrument eliminated.

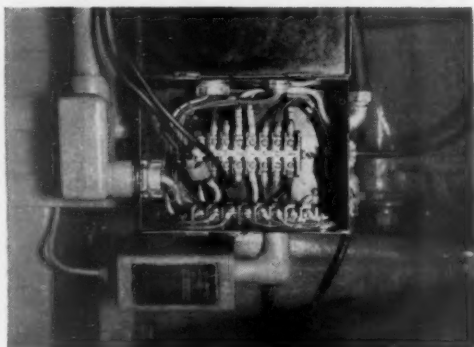
CIRCLE NO. 92 ON INQUIRY CARD—PAGE 17



Insulated Connectors Cut Installation, Maintenance

A large midwestern manufacturer has sharply reduced costs of installing and maintaining relay connections in machine tool control panels by using insulated connectors which can be crimped directly to wire leads. Elimination of the need to twist each lead under a screw and tape it heavily to insulate it from adjacent wires permits electricians to locate bad joints by quick visual inspection and more rapidly make repairs.

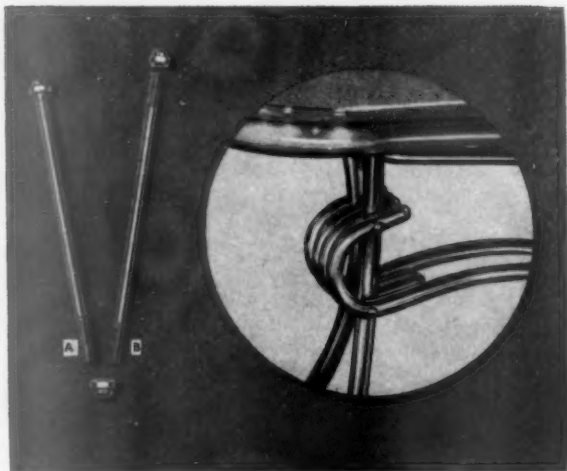
CIRCLE NO. 93 ON INQUIRY CARD—PAGE 17





Materials and Components

Materials and Components



Fasteners Save \$13.85 per Thousand Installations

Virtue Brothers, Los Angeles manufacturers of chrome dinette sets, cut assembly costs in half by switching from a three-piece (B) to a two-piece (A) fastener. The new cold-formed unit plus assembly runs \$27.15 a thousand as against former costs of \$41.00. Results: increased production; saving of \$13.85 per thousand installations.

CIRCLE NO. 94 ON INQUIRY CARD—PAGE 17

Use of Alloy Reduces Basket Maintenance 90%

Maintenance of baskets used by a large eastern manufacturing company in a process involving sulfuric acid, has been reduced 90% by fabricating them of a special alloy. Penetration is less than 0.004" per year and the baskets are expected to last for 20 years, producing a potential overall saving of nearly \$100,000.

CIRCLE NO. 95 ON INQUIRY CARD—PAGE 17



Extends Life of Fixture More Than 7 Times

A soldering fixture made with an alloy is used by the SoundScriber Corp., New Haven, Conn. for assembling parts of magnetic recording heads. Locating surfaces of fixtures previously used were corroded by the flux after handling 700 parts. Fixtures made from the alloy are in perfect condition after handling 5000 parts.

CIRCLE NO. 96 ON INQUIRY CARD—PAGE 17

Aluminum Tubing Saves \$50,000

Esso Standard Oil Company, Baton Rouge, La., planning redesign of seven sweater units, which remove wax from oils, wanted to use aluminum tubing. The idea had been dropped in the past because suitable aluminum fittings and welding techniques had not been developed. An aluminum company and a fittings maker got together. The first developed a new brazing technique. The second provided long radius 180° return bends and 90° elbows with small tangents on each end. Thus, the switch from copper to aluminum could be made, and the company saved an estimated total of \$50,000.

CIRCLE NO. 97 ON INQUIRY CARD—PAGE 17



Glass Cord Steam Hose Gives 4 Times More Service

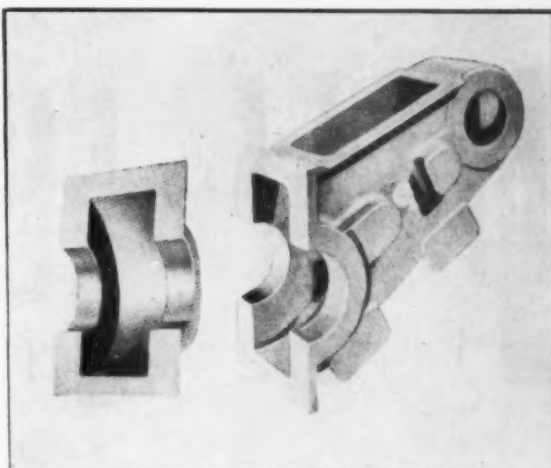
A California aircraft manufacturing company found that ordinary steam hose failed within six months because of high pressure and high temperature. A glass cord steam hose was installed to do the job. It has served over two years, 20 hours a day. This is four times the service given by the ordinary steam hose.

CIRCLE NO. 98 ON INQUIRY CARD—PAGE 17

Cost Saving of 30% Through Redesign of Gear Case

A manufacturer of overhead cranes effected a cost saving of 30% and a weight reduction of 11% in the trolley reduction gear case and cover for the overhead crane. The gear case was re-designed from a fabricated unit to a foundry engineered steel casting. The appearance was also greatly improved.

CIRCLE NO. 99 ON INQUIRY CARD—PAGE 17





Steel Tubing In Extra-Long Coils Reduces Waste Up To 50%

A major producer of home freezers used continuous coils to wind welded steel tubing on unit after unit, with the result that there were no left-over pieces. This use of extra-long coils not only saved up to 50% in "short end" waste, but took considerably less time than the use of standard length coils.

CIRCLE NO. 100 ON INQUIRY CARD—PAGE 17

Use of Plastic Pipe Ends Internal Rust And Corrosion

Internal rust and corrosion have been eliminated by the Pennsylvania Range Boiler Company from their gas-fired water heaters. They equip them with cold water dip tubes made from a rigid vinyl plastic. The material is not subject to the electrolytic action which results between the metal dip tube and the zinc tank lining when galvanized steel is used. This action eventually corrodes through the tank itself.

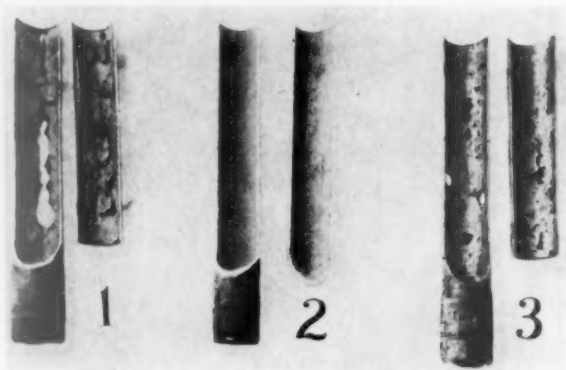
CIRCLE NO. 101 ON INQUIRY CARD—PAGE 17



Plastic Tubing Lasts 14 Months Without Corrosion

Severe corrosion by salt water and hydrogen sulfide that quickly destroys metal pipe in oil fields has little effect on a new type thermosetting resin pipe. The greater corrosion resistance of the new type pipe has been well proved on the Arbuckle Lime formation of Northern Kansas. Cement-lined tubing (1) removed after 14 months service was corroded beyond repair. The plastic tubing (2) endured the same corrosive attack for 14 months without corrosion. Plastic coated tubing (3) broke down after 9 months' service.

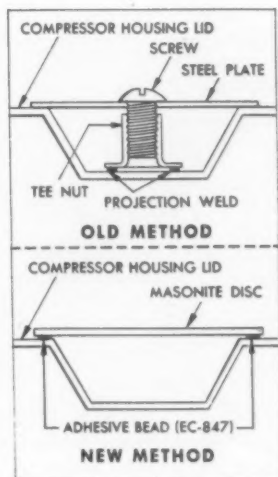
CIRCLE NO. 102 ON INQUIRY CARD—PAGE 17



Parts Requirements Cut 2/3

It formerly took 36 separate parts to put a door on a new Ford—6 screws and 12 washers for each of the two hinges. Use of Hex Spin-Lock screws has made the washers unnecessary. Now hinges are fastened more securely than ever, with one-third the number of parts previously used. Assembly and inventory costs have also been cut.

CIRCLE NO. 103 ON INQUIRY CARD—PAGE 17



Bonding Disc To Compressor Lid Saves Time, Money, Materials

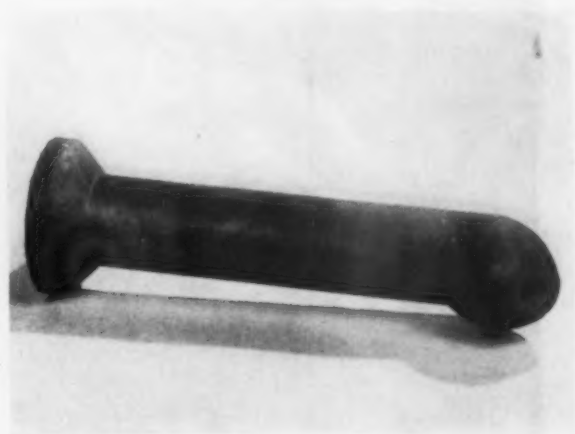
Use of an adhesive to bond a Masonite disc to the compressor housing lid for sound damping on the compressor provided the manufacturer with these advantages: the disc costs less than the steel plate it replaced; the tee nut and screw are eliminated along with the welding operation needed; positioning of the disc is speeded, since there is no need for centering the hole over the tee nut or driving a holding screw.

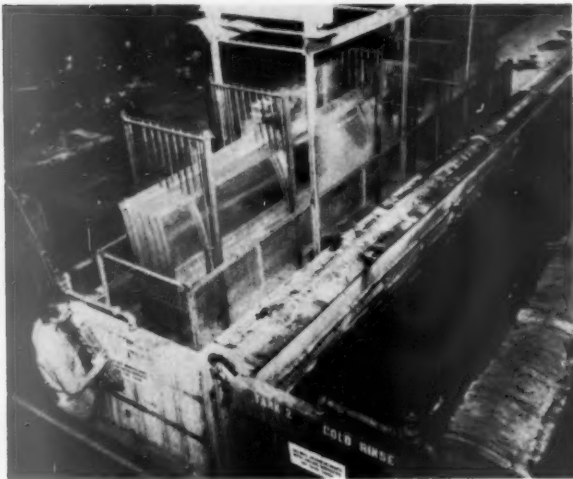
CIRCLE NO. 104 ON INQUIRY CARD—PAGE 17

Switch To Silicon Carbide Lengthens Spray Nozzle Life

Various metal materials used in spray nozzles employed in the SO_2 recovery process at Standard Oil Company of New Jersey's Bayway refinery lasted only a couple of months. After a switch to silicon carbide, the nozzles have been in use for 5 years without showing any signs of wear. The refractory successfully overcomes the combination of extreme corrosion, erosion and temperature conditions at the refinery.

CIRCLE NO. 105 ON INQUIRY CARD—PAGE 17





Tank Lining Speeds Up Part Cleaning By As Much As 50%

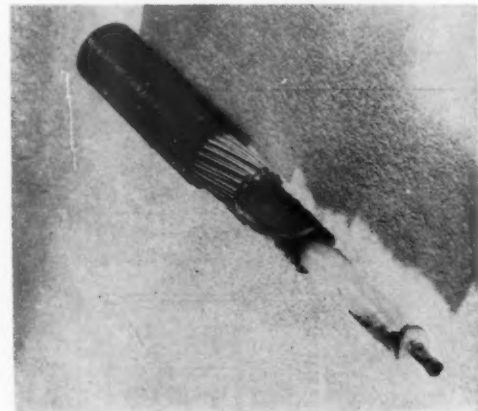
A leading airplane maker cleans wings and body in large tanks. When a faster process was developed, it was found that the strong acids necessary would eat through wood and metal tanks. Not even rubber tank linings could stand up against them. But the new process was made possible by a synthetic flexible material which is now used to line the tanks. This vital step in airplane making thus has been speeded up as much as 50%.

CIRCLE NO. 106 ON INQUIRY CARD—PAGE 17

New Cable Uses Less Steel, Copper, Yarn; Cost Reduced by 1/3

The longest single polyethylene-insulated cable ever made now links Europe with South America. It replaces a section of cable lost during World War II. Cost of the new cable with a core of gutta-percha (material previously used) would have been about 58% higher than the cost of the polyethylene core cable. A 25% saving in the amount of copper used for conductors is due to the low dielectric constant of polyethylene. The new cable required 13% less steel wire to bear its own weight. Savings were also realized on jute yarn.

CIRCLE NO. 107 ON INQUIRY CARD—PAGE 17



Precision Casting Cuts Costs 84% On Cam For Gas Lift Valve

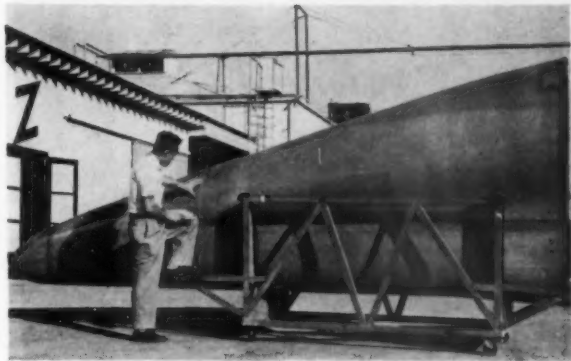
This latching cam for the Camco retrievable gas lift valve has to be corrosion resistant to withstand oil well corrosives and hard enough to stand up under the shock and abrasion of years of service. Cost of machining the cam was high so the part was precision cast in corrosion-resistant nickel alloy so it requires only drilling one hole and lapping to finish. Result: Costs are cut 84% and cam is now made in this harder alloy.

CIRCLE NO. 108 ON INQUIRY CARD—PAGE 17

Plastic Fuselage 80% Cheaper Than Metal, Weighs 33% Less

Lockheed Aircraft Corp., saves the taxpayer 80% by the use of reinforced plastic fuselage structures for the U. S. Navy's new Neptune patrol bomber. Without sacrificing strength or weight, five of these seventeen-foot stinger tails can be produced at about the same cost as one of the conventional type. The weight is 1/3 less than the lightest practical metal equivalent.

CIRCLE NO. 109 ON INQUIRY CARD—PAGE 17



Quarter Million Dollars Saved Through Use of Special Rivets

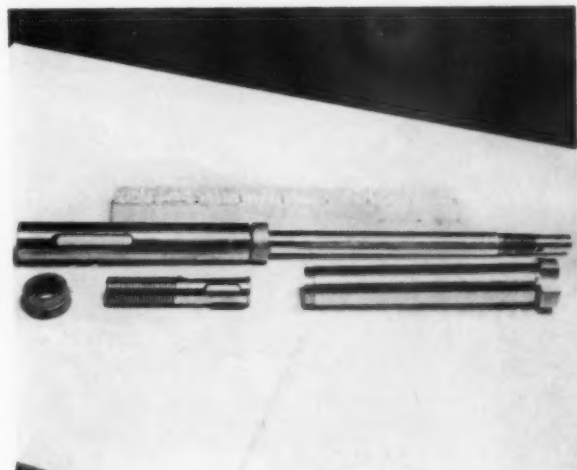
Nearly a quarter of a million dollars were saved on the first contract where the Glenn L. Martin Aircraft Company used new monel rivets as fastenings. Blind riveting using the new fastenings permits semi-skilled operators to "set" up to 1200 rivets per hour. A pneumatic "gun" draws the disposable steel mandrels through the rivets to expand them. The rivets give approximately the same strength, size for size, as aluminum rivets.

CIRCLE NO. 110 ON INQUIRY CARD—PAGE 17

Leaded Alloy Steel Boosts Production, Adds To Tool Life

Production of steel parts was increased substantially for a manufacturer when a change was made from AISI 4140 alloy steel to a leaded alloy steel possessing the same mechanical properties. For example, production time for a micro nut was reduced from 90 seconds to 60 seconds; turning operations on the spindle were increased from 460 rpm to 740 rpm and feed from .006" to .009". Tool life in some operations was lengthened 100%.

CIRCLE NO. 111 ON INQUIRY CARD—PAGE 17





Nickel Alloy Racks Still In Use After 10 Months

Cold-rolled steel parts for Underwood typewriters are heat-treated in a 1575°-60% cyanide salt bath for 8 minutes to give them extra strength and wear resistance. The company tried mesh baskets for the heat-treating, but had to give them up because of the time needed to straighten out-of-line parts. Perforated racks lasted only a few weeks. A high-temperature-and corrosion-resisting nickel alloy was tried. Racks of this material are still taking the treatment 10 months later. There has also been a saving on assembly time for straightening parts.

CIRCLE NO. 112 ON INQUIRY CARD—PAGE 17

Plastic Parts Cut Production Time, Reduce Machining

By using molded phenolic plastics for the housing and other outer parts of its new Sunstrand automatic printing calculator, Underwood Corporation has substantially cut production time. When aluminum was used for these parts, a new sand mold was required for each casting. Considerable clean-up time was needed to remove fins, gates and risers. The plastic parts come out of the press with smooth contours and little or no trimming is necessary.

CIRCLE NO. 113 ON INQUIRY CARD—PAGE 17



Stainless Steel Ends Costly Nitriding for Valve Maker

A leading valve manufacturer was having trouble with non-hardenable chromium nickel steels used in check valves. It was frequently too soft and costly nitriding had to be done for wear resistance. The answer was found in a stainless steel which in the soft condition can readily be formed and blanked into check valve discs. Proper hardness without distortion is attained by a double low-temperature heat treatment.

CIRCLE NO. 114 ON INQUIRY CARD—PAGE 17

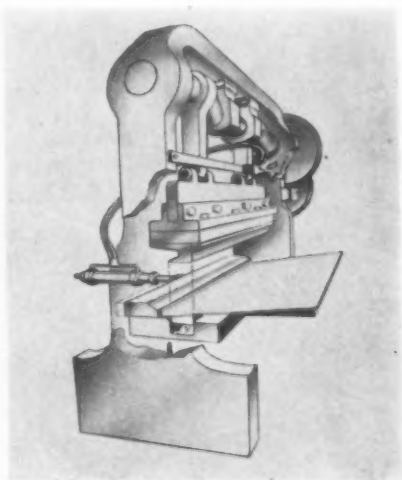
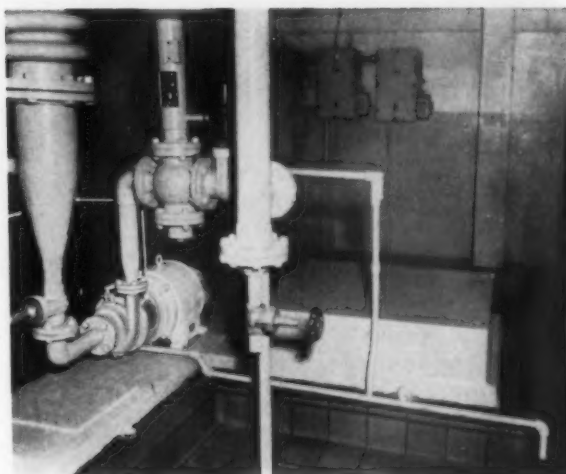


Materials and Components

Pump Uses 66% Less Power, Cuts Space Requirements

A pump made of durable aluminum bronze alloys handling an extremely viscous, corrosive syrup in a distillery has given more than a year of day-in, day-out service with practically no signs of wear. It uses 66% less power, cuts space requirements, improves process efficiency and eliminates weekly pump maintenance.

CIRCLE NO. 115 ON INQUIRY CARD—PAGE 17



Special Metal Back Gage Aids In \$100 Daily Saving

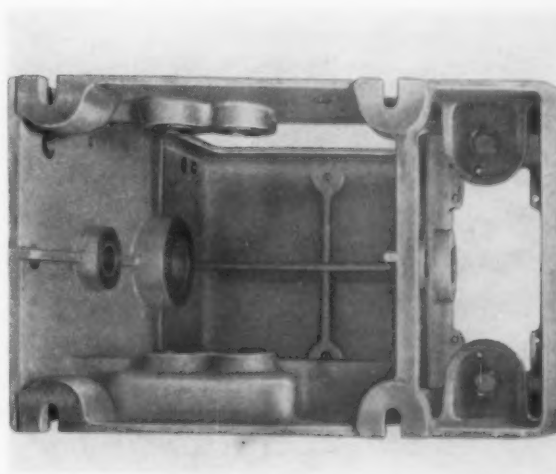
To reduce production costs on a power brake, an automatic flanging die with a movable back gage was employed. It permitted the forming of 6 different bends with a single set-up. The back gage had been made of hardened and ground steel, but it wore rapidly as a result of the horizontal thrust of the sharp edges of the steel sheet being worked. Use of Meehanite metal for the gage solved the wear problem. Three years after installation the unit had gone through 9 million operations without removal for maintenance, repair or straightening.

CIRCLE NO. 116 ON INQUIRY CARD—PAGE 17

Gray Iron Casting Does Better Job For 50% Less

Production of a fabricated steel base for a press had been costing the manufacturer about \$302 for material and labor. The base was re-designed as a gray iron casting, and material and labor costs were reduced to approximately \$150. Reduced machining time saved another 15%. Both appearance and performance of the casting are said to be superior to the fabricated product.

CIRCLE NO. 117 ON INQUIRY CARD—PAGE 17





Phenolic Resin Sand Cores Save On Machining, Core Driers

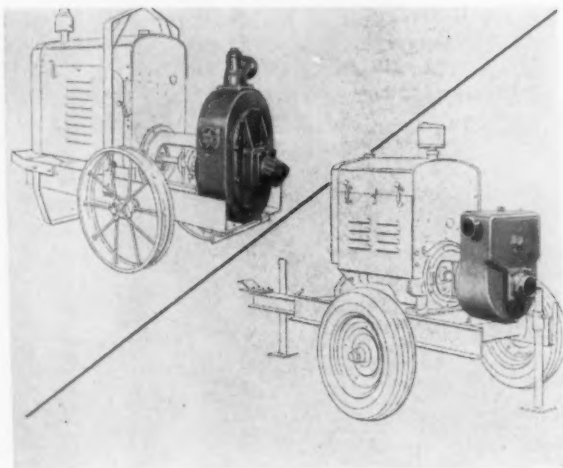
These precision sand cores, made of phenolic resins, are used in producing aluminum castings made by The Maco Corporation, Huntington, Ind. They are baked in the core box to the desired strength and rigidity in a few minutes. This eliminates the expense of a large number of absolutely accurate core driers. Their great accuracy saves machining of the interior of the casting after all outside surfaces have been finished.

CIRCLE NO. 118 ON INQUIRY CARD—PAGE 17

Bronze Alloy Increases Service Life 60 Times

Slide blocks used in wire formers made by Zig Zag Spring Co., Los Angeles, Calif., operate at 1000 cycles per minute and transmit $4\frac{1}{2}$ hp. This severe shock application destroyed a roller bearing assembly after 4 days' operation and ordinary bearing bronze in less than a month. Slide blocks of a special bronze alloy now used by the company have resisted wear for 5 years in around-the-clock service. Although close tolerances must be held, no adjustments due to wear have been required on these slide blocks during this period.

CIRCLE NO. 119 ON INQUIRY CARD—PAGE 17



Costs Down 20%, Efficiency Up

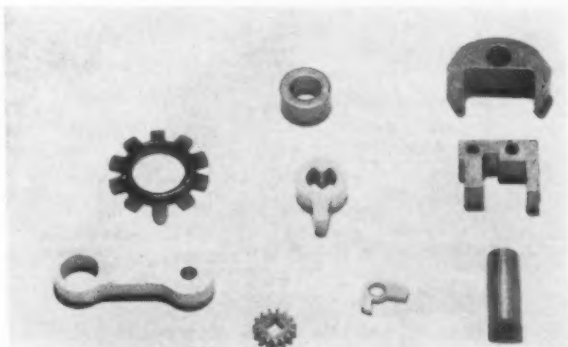
The tank of this Marlow portable self-priming centrifugal pump was originally fabricated in steel. In modernizing the unit, the manufacturer redesigned the tank for production in gray iron. He realized a 20% saving in costs, and substantially increased the efficiency of the tank.

CIRCLE NO. 120 ON INQUIRY CARD—PAGE 17

Laminated Shims Save Engine Maker \$45,000 A Year

A jet engine manufacturer reports savings of \$45,000 annually resulting from the application of a specialty manufacturer's product. Three laminated shims replaced 18 separate shims previously used in providing backlash adjustment for certain bevel gears in the engine. Savings result both from the reduction in number of parts used and the ability of the specialist to produce more economically.

CIRCLE NO. 121 ON INQUIRY CARD—PAGE 17



Powdered Metal Parts Reduce Costs Up To 95%

Investigation of powdered metal for many cash register parts can pay off reports the National Cash Register Co. of Dayton, O. Replacing small stampings and machined parts with powdered metal has resulted in cost reductions as great as 57-95%. Lower costs arise from fewer manufacturing and assembly operations as well as reduced scrap losses. Quality is also improved because of the tight dimensional control possible with powdered metal and good surface finish.

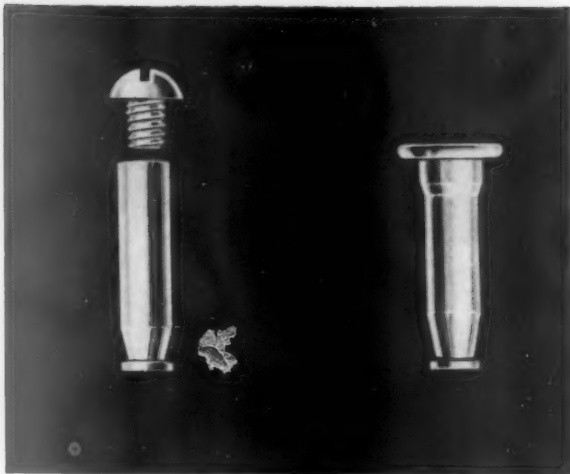
CIRCLE NO. 122 ON INQUIRY CARD—PAGE 17

Shim Eliminates Grinding; \$10,000 Saved Annually

Substitution of laminated shims for ground shims saved a railroad equipment manufacturer almost \$10,000 annually. Formerly, the manufacturer used solid shims which were ground individually to size after dimensions were determined by assembly and disassembly. With a laminated shim, grinding is eliminated since laminations can be peeled off until the proper thickness is obtained.

CIRCLE NO. 123 ON INQUIRY CARD—PAGE 17





Two-Part Fastener Replaced By Cold Formed Item, Cost Cut 78%

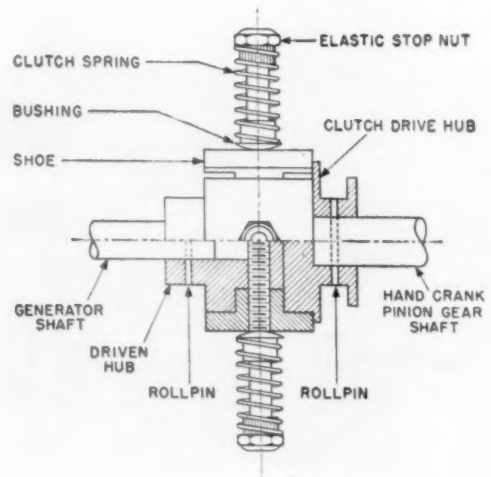
A two-part fastener used to hold louvers in a line of fixtures made by a fluorescent lighting manufacturer cost \$35.00 per thousand. In addition, to save costs, the time-consuming job of mounting the louvers when the fixture was installed was left to the customer. A single cold formed part, costing only \$7.50 per thousand, replaces the machined fastener and enables the manufacturer to ship the fixture completely assembled.

CIRCLE NO. 124 ON INQUIRY CARD—PAGE 17

Manufacturing Costs Lowered By Simple Components

The Winslow Co. of Newark, N. J. has reduced the manufacturing cost and improved the quality of its megohmmeter clutch by analysis of detail components. An inexpensive bushing made on an eyelet machine replaces one machined bushing on the shoe end of each stud while a clinch type stop nut replaces another bushing at the nut end of the stud. A Rollpin held in a drilled hole in the hub supersedes a taper pin which required a costly taper reaming operation in the hub.

CIRCLE NO. 125 ON INQUIRY CARD—PAGE 17



Steel Alloy Tubing Saves Shovel Manufacturer \$10,000 Per Year

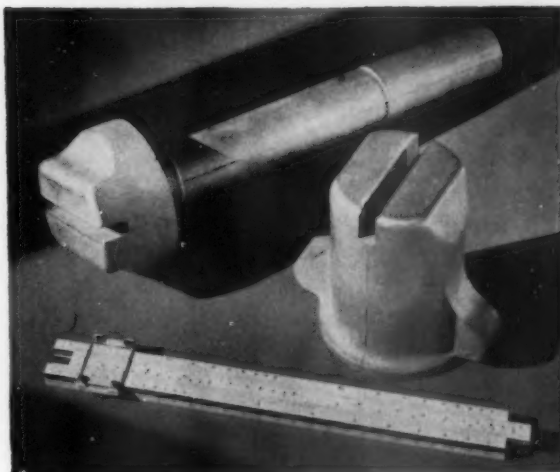
Steel shafts that drive a power shovel's crawler mechanism have to be hollow to accommodate steering levers that operate inside. Drilling the hole, in bar stock, proved a costly operation for a power shovel manufacturer. Using a high grade, seamless, steel alloy tube, the company found that the cost of the finished product was cut 25%. He claims this amounts to \$10,000 per year.

CIRCLE NO. 126 ON INQUIRY CARD—PAGE 17

Shell Molding Saves Money, Increases Production

Shell molding has resulted in production savings reflected in a 30% price reduction on some pieces made by Metal and Alloy Specialties Co., Inc., Buffalo, N. Y. These shell moldings are part of a high current transformer bushing and are high electrical conductivity copper. The molding has also resulted in a better product than when conventionally cast in green sand and also upped foundry production by several hundred per cent.

CIRCLE NO. 127 ON INQUIRY CARD—PAGE 17



Stainless Steel Drops Plating Operation, Lowers Unit Costs

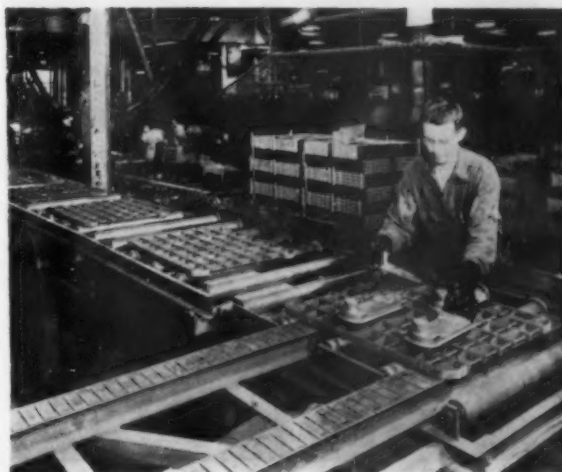
Making reamer-type pipe cleaners from carbon steel posed costly problems for B.A.C. Machine Co., Needham, Mass., through time delays caused in sending out parts for chrome plating. With plating costs at 7 cents per blade and three blades needed for each cleaner, chrome plating also contributed to high unit costs. Changing to stainless steel, the manufacturer now concentrated all his work in his own plant—eliminating expenses and delays in “outshopping” an operation.

CIRCLE NO. 128 ON INQUIRY CARD—PAGE 17

Tray Life Almost Tripled

At Fedders-Quigan Corp. of Buffalo, “serpentine” design trays carry air conditioning parts on power rollers through a furnace for brazing at 2050F. These trays are good for 6000 trips through the furnace before they are rebuilt. Previously trays would only hold up for 2500 trips. Greater tray life has been obtained by articulated construction which resists warping.

CIRCLE NO. 129 ON INQUIRY CARD—PAGE 17





Alloy Steel 'Skips' Two Heat Treatments, Cuts Costs 12%

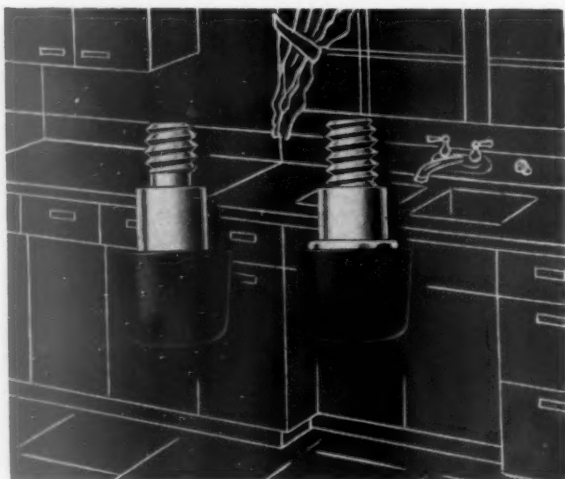
At Gill Rock Drill Co., Lebanon, Pa., pins and boxes for heavy duty rotary drills are turned, drilled and threaded from alloy steel without any additional heat treatment. Steel formerly used had to be sent out for heat treatment before and after machining—a costly and time consuming operation. Pre-hardened, free-cutting alloy steels meet all high quality specifications and yet produce drill pins and boxes for 12% less than before.

CIRCLE NO. 130 ON INQUIRY CARD—PAGE 17

Slippage Damage Reduced Nearly 100% By Cross-Recessed Screws

Cross-recessed-head screws have nearly eliminated slippage damage for Fedder-Quigan Corp., Buffalo, N. Y. Fedders room air-conditioners are not allowed to leave the factory with the slightest mar. Tight bond, faster driving and "level" heads have maintained high quality and reduced production costs through fewer rejects and faster production. Also, elimination of screw loosening under vibration presents fewer service problems.

CIRCLE NO. 131 ON INQUIRY CARD—PAGE 17



Cold Formed Leveling Screws Save Manufacturer \$20,000

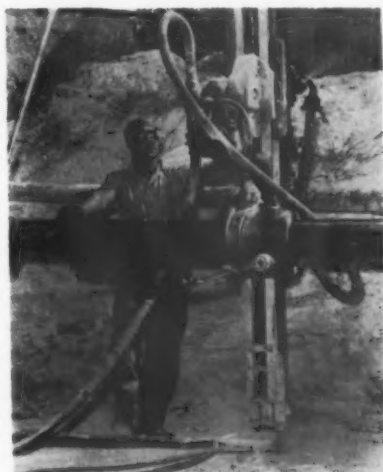
The part on the right in the photo has a special collar to prevent the rubber cap from slipping over the shank. One of the country's manufacturers of kitchen cabinets uses it in preference to the screw machine part. Produced on cold forming equipment, it costs \$6.00 less per thousand and has already saved the company over \$20,000 per year.

CIRCLE NO. 132 ON INQUIRY CARD—PAGE 17

Steel Tubing Saves \$35,000 Per Year In Making Shift Sleeves

An automotive parts manufacturer found that making shift sleeves from a forged ring needing several machining operations was costing up to \$1.71 per unit. Switching to seamless steel tubing, he cut 13¢ per unit on material alone and an additional 11¢ on production. Unlike individual forgings, the long lengths of tubing could be machined on a 4-spindle automatic screw machine. Total savings on sleeve production in one year amounted to \$35,000.

CIRCLE NO. 133 ON INQUIRY CARD—PAGE 17



Carbide Insert Bits Boost Drilling Speeds By 50%

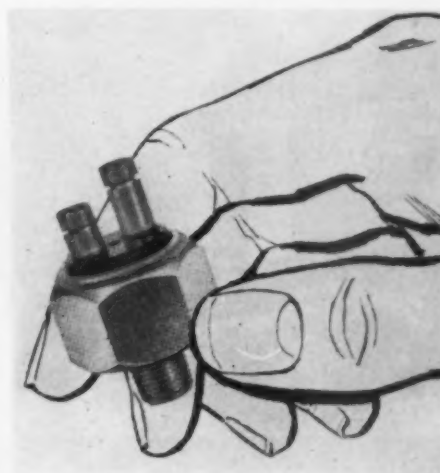
Harmony Blue Granite Co., Elberton, Ga., increased their drilling speed by 50%, cut drill steel requirements and attained maximum production with carbide insert bits. The bits proved most economical for constant-gage holes, small diameter blast holes and very deep holes. They are quickly and easily changed, have special shoulder unions to protect threads from drill impact and are made from electric furnace fine alloy steel.

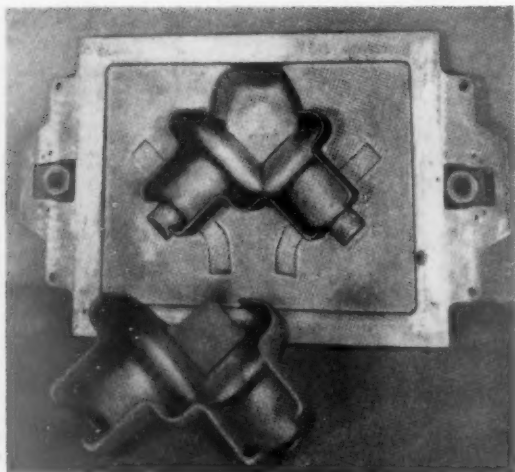
CIRCLE NO. 134 ON INQUIRY CARD—PAGE 17

Stop Light Switch Rejections Cut 75%, Production Increased

Because stop light switches affect driving safety, Auto-Lite tests each assembly for performance as a final operation. Cold crimping in the final assembly caused severe splitting and cracking and consequent rejections. On switch housing made from free-machined, lead-bearing steel bars, rejections dropped 75%. Also, the premium grade steel allowed faster machining and brought increased production to offset cost of the steel.

CIRCLE NO. 135 ON INQUIRY CARD—PAGE 17





Production Costs Cut By 90% With Use Of Gray Iron

Formerly, nine separate pieces were shaped and welded into a fabricated gear cover for a braiding machine. After redesigning for gray iron production, the manufacturer found the finished and machined casting cost less than 10% of the production cost of the fabricated piece. Applying the savings to liquidating pattern-equipment costs, the manufacturer is netting 90% savings on all subsequent parts produced.

CIRCLE NO. 136 ON INQUIRY CARD—PAGE 17

Cross-Recessed-Head Screws Speeds Production 100%

One of the nation's manufacturers of tubular steel furniture, Daystrom Furniture Co., Olean, N. Y., finds that cross-recessed-head screws permit 100% faster production. Inexperienced operators can easily center the driver bit in the screws and costly trial-and-error centering is eliminated. A plus value is the fact that the greater contact area of the screws also allows more torque and thus gives a tighter bond.

CIRCLE NO. 137 ON INQUIRY CARD—PAGE 17



Pre-Enameled Coil Speeds Production, Lowers Costs

Bright Star Industries of Clifton, N. J. has reduced costs of battery tops and flashlight cases by using pre-enameled metal coil which can be formed, embossed, spun, or crimped without damaging the paint. Formerly, Bright Star made battery tops from lithographed sheets which were slit into strips and then fed manually into presses. Now, pre-enameled coil can be automatically fed into presses with considerable saving in labor cost. Production has increased more than 100%.

CIRCLE NO. 138 ON INQUIRY CARD—PAGE 17





Product Finishing



Surfacing Method Increases Cutting Tool Life Up to 1000%

A new hard chrome surfacing method has enabled one user to increase cutting tool life up to 1000%. The process involves the use of 5 tanks, 5 rectifiers, a fume separator, automatic heating elements and controls. A manufacturer can set up his own production hard chrome department with a minimum of installation cost. The process provides precision deposition and control of plate thickness and greater throwing power into grooves and recesses.

CIRCLE NO. 139 ON INQUIRY CARD—PAGE 17

4 to 5 Hour Deburring Job Done in 15 Minutes

Automatic deburring and deflashing of die castings by means of airless blasting has brought savings for Electro-Voice, Inc., Buchanan, Mich. Manual deburring has been completely eliminated or greatly reduced on at least 20 parts. One of these is a microphone front cover plate. Airless blasting deburrs and deflashes 300 of them in 15 minutes. Manual methods took 4 to 5 hours.

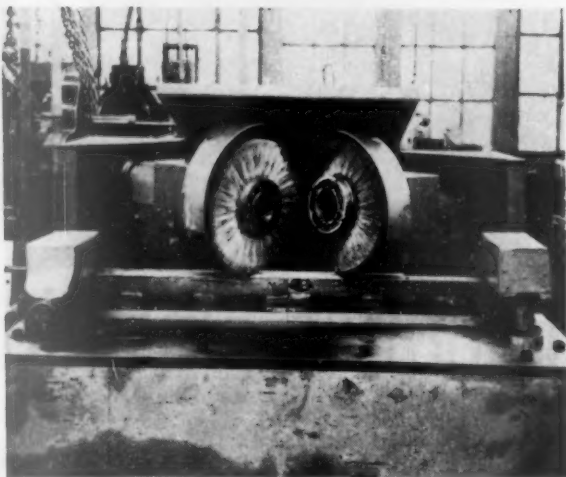
CIRCLE NO. 140 ON INQUIRY CARD—PAGE 17



500% Production Increase Through New Brushing Method

A new mass production brushing method for deburring and blending of surface junctures and sur-irregularities of gear racks has brought production increases of more than 500% for American Type Founders. The method uses power brushes, and has cut deburring and finishing time from 50 minutes per unit to less than 10 minutes. In the setup shown, the rack runs its complete 17-foot length, then is sent back in the other direction by a limit switch. Brushes are also reversed to brush the gear teeth in the other direction.

CIRCLE NO. 141 ON INQUIRY CARD—PAGE 17



Brushes Lower Finishing Cost On Plastic Counter Tops

Plastic counter tops normally come from the press with a mirror finish. Because users prefer a streak-free satin finish, however, it is necessary to dull the tops. By using a rotating brush, the maker is now able to control quality entirely at the brushing operation. Panel finish is uniform, finish variations from the molding press operation are eliminated. The pressure plates can be mirror finish, so cost of plate refinishing is eliminated.

CIRCLE NO. 142 ON INQUIRY CARD—PAGE 17



Cloth Abrasive Belt Helps Double Finishing Output

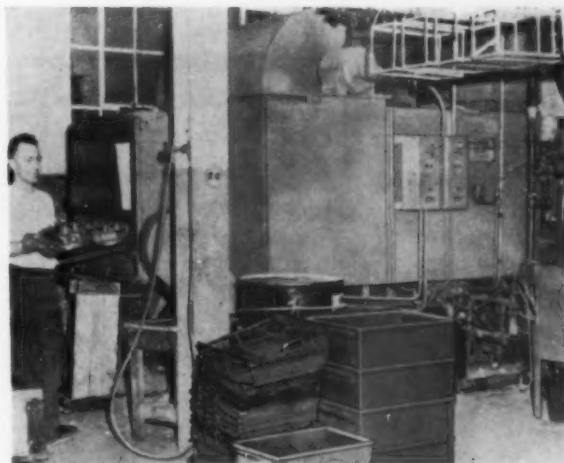
Finishing of bronze marine steering wheels was doubled after Perkins Marine Lamp & Hardware Co., Brooklyn, N.Y., started using a cloth abrasive belt and stitched buff contact wheel. The firm also uses a compress canvas contact wheel with 180 grit abrasive belt for finishing boat ventilators. This upped production from 3 or 4 pieces to 8 pieces per hour. Better finishes were obtained in both cases.

CIRCLE NO. 143 ON INQUIRY CARD—PAGE 17

50% More Castings Cleaned With Special Washing Unit

A machine for cleaning and degreasing castings at the Meriden, Conn., plant of Cuno Engineering Corp. produces about 50% more work with the same labor costs as washing methods previously used. The parts are placed on a chain type conveyor belt and are first degreased by washing in a solution at 170 F. This is followed by a clear hot water rinse.

CIRCLE NO. 144 ON INQUIRY CARD—PAGE 17





Welded Equipment Cleaning Costs Reduced By 35%

Airblast cleaning with a specially designed automatic cabinet saves 35% in the cost of cleaning rust, flux and spatter from welded automotive service equipment at Weaver Mfg. Co., Springfield, Ill. The fabricated pieces handled by the cabinet are of a wide variety of sizes and shapes up to 48" wide and 30" high. A production bottleneck in the cleaning department, due to the slowness of manual brushing, grinding and chiseling, has been eliminated.

CIRCLE NO. 145 ON INQUIRY CARD—PAGE 17

2 Operations Reduced to 1

Two operations formerly were necessary for removing spinning marks prior to buffing bugle horns at Buglecrafft, Inc., Brooklyn, N.Y. When the company changed to an abrasive belt and contact wheel method greasing and grinding were combined into a single operation.

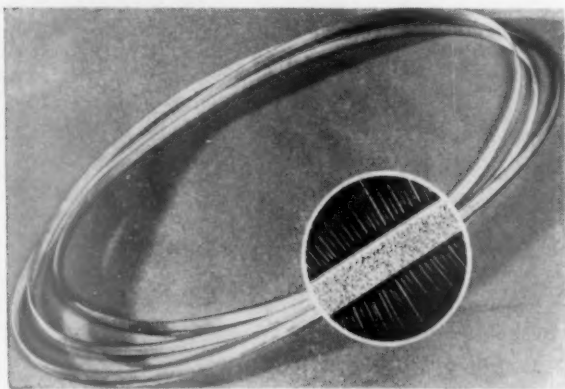
CIRCLE NO. 146 ON INQUIRY CARD—PAGE 17



Carbide Rolls Polished In 20 Minutes; Old Method Took 4 Hours

Commercial diamonds, embedded in a belt of extruded nylon plastic are solving polishing problems posed by the replacement of conventional steels by ultra-hard carbide. Initially designed for removing wear rings in bell-mouthed dies, the diamond-impregnated nylon belts have been used to polish inner ball-bearing races and outside diameters of carbide rolls. In the latter instance, 20 minutes are needed for belt polishing, compared to four hours for the old method.

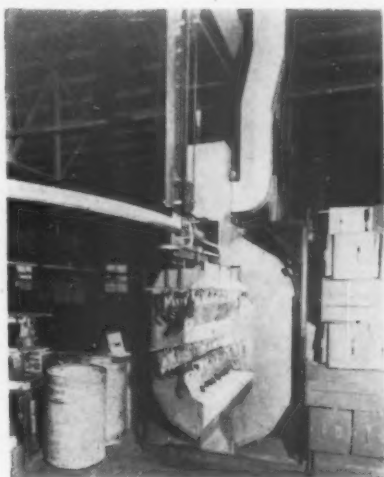
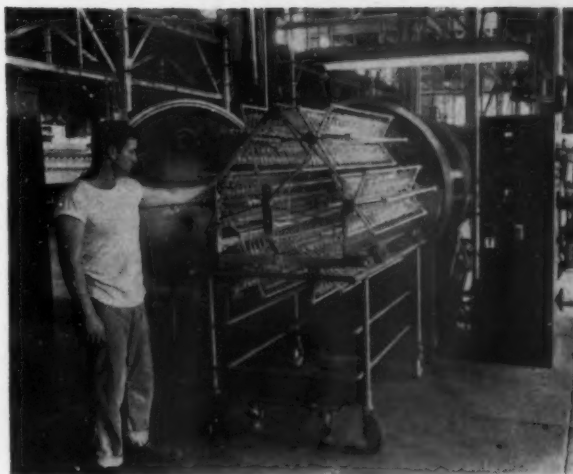
CIRCLE NO. 147 ON INQUIRY CARD—PAGE 17



Metal Finishing Costs Cut With Vacuum Metallizing Process

By switching from electroplating to vacuum metallizing, Yoder Mfg. Co., Little Rock, Ark., cut its finishing costs on zinc die-cast bicycle horns to one-sixth the electroplating figure. Retaining an appealing silvery finish that is more corrosion resistant, Yoder turns out 20,000 horns per eight-hour day. Lower production costs resulted in reduced selling price and a greater volume of business. Yoder now metallizes a line of injection-molded acetate horns, also.

CIRCLE NO. 148 ON INQUIRY CARD—PAGE 17



Doubles Production With New Baking Oven

A prominent office furniture manufacturer is now producing eleven complete office filing cabinets an hour, whereas previously he could only produce five an hour. This is accomplished by means of a new baking oven which has reduced the time factor from 30 minutes to 5½ minutes. Interior cabinet fittings which were formerly baked separately are now baked inside the cabinet.

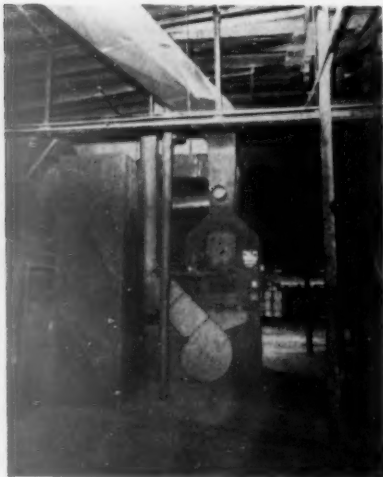
CIRCLE NO. 149 ON INQUIRY CARD—PAGE 17

Camshaft Hardening Takes 15 Minutes Compared to 1 Hour

Continental Motors Corp., Muskegon, Mich., had to harden camshafts for Ordnance Corps tank and cargo carrier engines to exacting specifications in the fastest possible manner in the smallest possible space. A salt bath hardening furnace with bath working dimensions of only 28" x 11" x 58" was installed to harden the 22-lb. components. Hardening is completed in only 15 minutes. Other types of equipment would have taken 45 to 60 minutes to heat the same size camshafts.

CIRCLE NO. 150 ON INQUIRY CARD—PAGE 17





Drying Time Cut 67%

Porcelain Products, Inc., Parkersburg, W. Va., manufacturer of electrical porcelain products, reduced the drying time of molded shapes by 67% and mold inventory by 75% with the installation of a gas fired, warm air, space heater on the drying ovens. With the original steam heating coils, plaster-of-paris molds had to be stored in the open one to two days to dry. With the new heat source, efficiency increased to the extent that two men were available for other jobs in the plant.

CIRCLE NO. 151 ON INQUIRY CARD—PAGE 17

New Bright-Nickel Plating Process Ups Output, Cuts Costs

S.E.&M. Vernon Co., Elizabeth, N. J., has realized substantial savings with a new bright-nickel plating process. Operating at lower temperatures saves 25% in heat demands. It uses 2000 amps compared to old methods of 4000. Fewer rejects occur and these are simply returned for double plating rather than stripping. They have reported no brightener break-down and consequently have not required an expensive batch purification.

CIRCLE NO. 152 ON INQUIRY CARD—PAGE 17



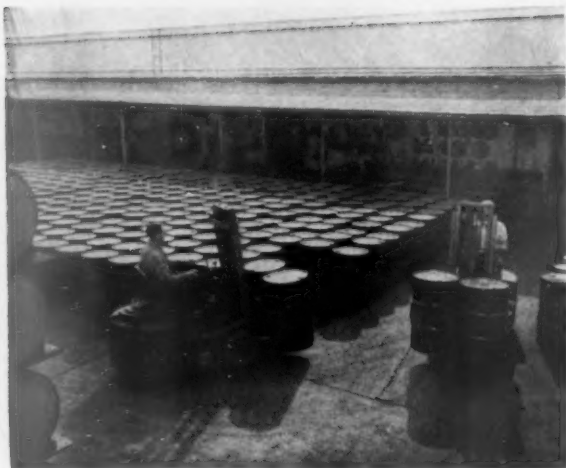
Machine Sanding Techniques Up Production Rate Five Times

Machine sanding techniques in the surface finishing of glass fiber reinforced plastics at Atlas Plastics, Inc., Buffalo, N.Y., has brought about a 500% increase in the production rate. This is especially true in the finishing of complex shape components like the fume duct shown. The resilient rubber pad, using 100 grit silicon carbide abrasive cloth, sands flat surfaces and convex and concave contours with ease. Surface finish is also better, compared with that obtained by previous methods.

CIRCLE NO. 153 ON INQUIRY CARD—PAGE 17



Materials Handling



Lift Trucks Save Time, Up Production, Aid Safety Record

By using three lift trucks with hydraulic load grab attachments in its terminal, Union Oil Company has saved 16 man hours a day and output has been increased 15% to 20%. Another added benefit from using the lift trucks, is the improvement in the safety record and the morale of the employees working in the terminal. Prior methods of materials handling were more hazardous and more fatiguing to the employees.

CIRCLE NO. 154 ON INQUIRY CARD—PAGE 17

Pneumatic System Induces Lime Into Water; Saves \$4050 A Year

The City of Batavia uses a pneumatic conveying system to induce pebbled lime into its water softening operation. Part of the pneumatic system is visible here. It has reduced the cost for unloading a ton of lime from \$2.14 to \$.30 and has cut the time for unloading a boxcar by 66%. The city has saved \$4050 in one year by use of the system.

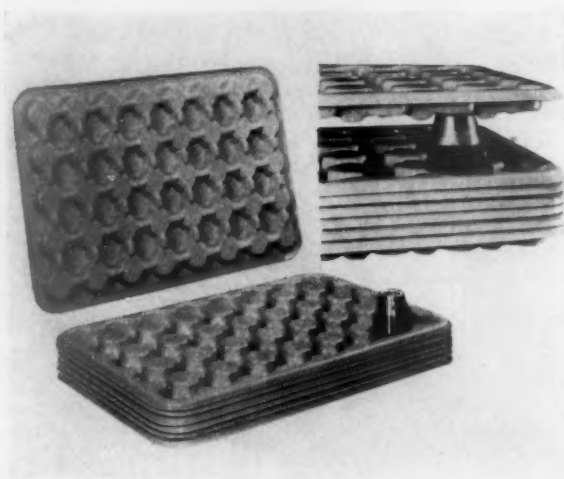
CIRCLE NO. 155 ON INQUIRY CARD—PAGE 17



Plastic Trays For Machined Parts Save 50% In Weight And Cost

A manufacturer of precision machined parts replaced metal trays for storing small parts with plastic trays and saved 50% in weight and cost. The metal trays neither nested nor stacked. The plastic trays, formed of a styrene co-polymer, are engineered so that recesses on both the tops and the bottoms of the trays exactly align with the machined parts. Six to eight trays may be safely stacked on each other.

CIRCLE NO. 156 ON INQUIRY CARD—PAGE 17



Dipping, Coating Production Doubled By Electric Hoist

Dipping and coating of aluminum awning sections was done entirely by hand in small bundles at Kool Vent Metal Awning Corp., Detroit, Mich. An electric hoist was installed and now larger loads can be handled at one time. There is greater control of hoisting, dipping and transportation operations, resulting in more uniform coating of the aluminum. The hoist has doubled production.

CIRCLE NO. 157 ON INQUIRY CARD—PAGE 17



Loading 28 Times Faster With New Style Truck Bodies

A fleet of fork lift trucks enabled the F. & M. Schaeffer Brewing Co., of Brooklyn, N. Y., to palletize 50% of their yearly production of 3,500,000 barrels. This loading method in combination with differently designed route trucks and trailers has speeded up loading to 28 times as fast as with the old manual methods. Number of delivery trucks needed was cut by 15%.

CIRCLE NO. 158 ON INQUIRY CARD—PAGE 17

Rubber Belt 50% Cheaper; Lasts Over 50% Longer

Expensive asbestos belts used in a conveyor by a glass manufacturer to carry sizzling hot salt from the ovens to a storage tank burned out in about seven months. They were replaced with heat resisting rubber belts, inside of which is a rayon fabric that not only stands up under heat, but also makes a thinner, more flexible belt. Costing half as much as asbestos belt, the rubber belt lasts over 50% longer.

CIRCLE NO. 159 ON INQUIRY CARD—PAGE 17





Bar Stock Attachment Pays For Itself In Few Months

Northwest Automatic Products Corp., Minneapolis, Minn., equipped a fork truck with telescopic crane attachment to move bundles of steel and brass bar stock. The unit cost \$1000 but paid for itself within a few months in time and labor saved over previous handling methods.

CIRCLE NO. 160 ON INQUIRY CARD—PAGE 17

Power Truck Lets One Man Do Work of Two, Faster

Eberhard Mfg. Co., Cleveland, Ohio, installed a special type of power truck with revolving carriage and special annealing pot grab for delivering castings 75 feet from the cooling floor to the shake out screen hopper. The monorail previously used required two men. Now one man handles castings and does it 15% faster. The new method is also safer.

CIRCLE NO. 161 ON INQUIRY CARD—PAGE 17



Multiple Tier Racks Help Warehouse Double Capacity

A large midwestern grocery chain doubled its warehouse capacity by installing multiple-tier racks made with a new framing material. By reducing the number of aisles through vertical storage, the chain effected great savings in time and effort required to load, unload, select and transport merchandise in the building. Racks can be changed in capacity or shelving depth at will.

CIRCLE NO. 162 ON INQUIRY CARD—PAGE 17



Hand Electric Fork Lift Used, Manhours Reduced 75%

The Ontario Milk Producers' Cooperative, Mexico, N.Y. has reduced shipping and receiving man-hours by 75% by placing four drums of powdered milk on a pallet and stacking the pallets four high. The job is done by means of a tilting, telescopic hand electric fork lift. Besides freeing men for more important jobs, the fork lift can more than double the available storage by taking full advantage of all available space.

CIRCLE NO. 163 ON INQUIRY CARD—PAGE 17



Operation Took 6 Hours; Now Done In 2

The United Specialties Company of Chicago is saving 65% of the time it formerly took two men to set up the dies for stamping stainless steel television tube shells. It uses a fork lift truck, equipped with a special unloading device. The truck picks up the male and female dies, weighing 2500 and 4000 lb. respectively, and moves them to the press, where two die set-up men can have the assembly ready for use in two hours. This compares with six hours normally required.

CIRCLE NO. 164 ON INQUIRY CARD—PAGE 17

Lift Truck Permits 4-Fold Volume Increase In Same Plant Space

Bell Brand Foods, Ltd., of Los Angeles, Calif., increased its volume four times with same plant facilities after installing a 2000 lb capacity lift truck. The renting of outside storage space is no longer necessary as the lift truck stacks higher to utilize previously unused air space. The costly and more hazardous job of hand stacking has also been eliminated.

CIRCLE NO. 165 ON INQUIRY CARD—PAGE 17



Materials Handling



Electric Lift Truck Saves 80 Manhours Per Week

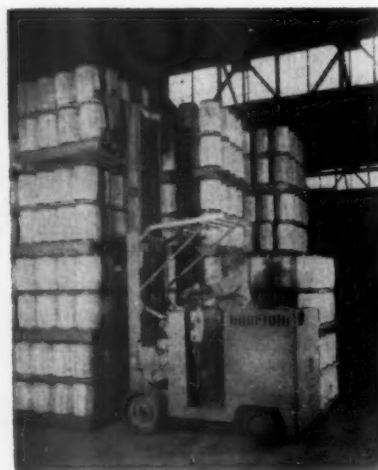
A Chicago book bindery uses this electric lift truck as the "flagship" for a fleet of hand lift trucks. It saves the time of two men, or 80 man-hours per week, compared with operations when the plant had only hand lift trucks. The truck enables one man to move heavy loads without physical effort.

CIRCLE NO. 166 ON INQUIRY CARD—PAGE 17

40% Less Keg Breakage; Safety And Efficiency Increased

Two electric fork trucks have reduced keg breakage by 40% at the Aliquippa, Pa. nail warehouse of Jones & Laughlin Steel Corp. Safety and efficiency have also been increased. A pallet system is in operation, and 16 kegs make one layer on the pallet. Two layers separated by a plywood sheet for stability are loaded onto each pallet. Loaded pallet weighs 3200 lbs. and the fork truck tiers pallet loads four high.

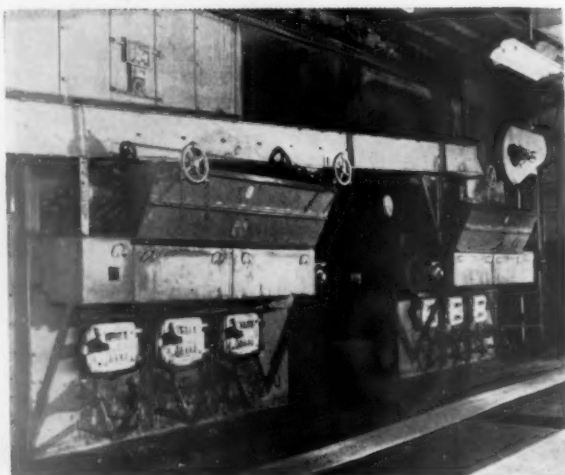
CIRCLE NO. 167 ON INQUIRY CARD—PAGE 17



Conveyor-Elevator System Helps Plant Save \$50,000

A steam plant modernization program at a New England textile mill reduced fuel consumption over 21% and labor costs 60%—for a total yearly saving of \$50,000. Two new boilers replaced five old units. A new automatic and dustless coal and ash handling system ended manual handling. Shown here is a horizontal conveyor distributing coal to stoker hoppers. A bin level control shuts down the conveyor when hopper is full. A complete conveyor-elevator system handles storage and reclaiming of coal.

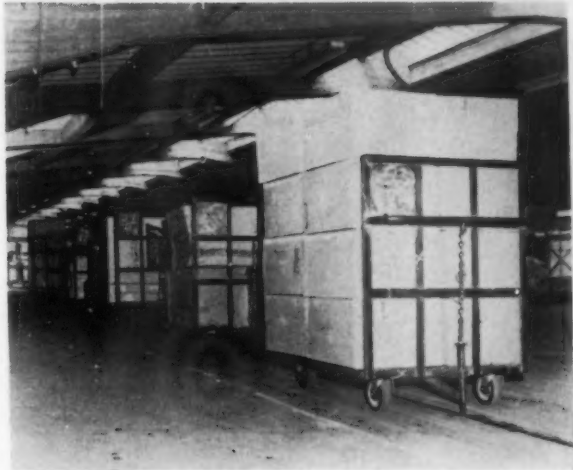
CIRCLE NO. 168 ON INQUIRY CARD—PAGE 17



\$90,000 Saved By Dragline Conveyors, Castered Trucks

The Dallas warehouse of Central Freight Lines, Inc., handles 3,000 tons of freight every 24 hours. Chain-in-floor dragline conveyors and castered trucks used by Central have saved as much as \$90,000 per year over previous methods in similar warehouses using as few as three 10 hp. motors for power in areas approximating 10 acres.

CIRCLE NO. 169 ON INQUIRY CARD—PAGE 17



Storage Space Doubled— Handling Time Cut In Half

At the Midwest Manufacturing Company, a subsidiary of Admiral, Galesburg, Ill., two 3000 lb. gas fork trucks with an hydraulic crate attachment and a special overall height of 130 inches, are stacking refrigerators two at a time up to a height of 280". This has enabled the company to double its storage space and cut handling time in half.

CIRCLE NO. 170 ON INQUIRY CARD—PAGE 17

Lift-Truck Shovel Saves 150 Man Hours Per Week

A 4000 lb. capacity lift truck speeds the handling of bulk forgings at the Detroit Gear Division of the Borg-Warner Corp. Using a shovel attachment, the truck drives from the unloading dock to the trailer trucks and scoops out the forgings. A 24,000 lb. truck-load is handled in $\frac{3}{4}$ to $1\frac{1}{2}$ man hours. Previous methods needed 16 to 18 man hours with a capacity of two truck-loads per day.

CIRCLE NO. 171 ON INQUIRY CARD—PAGE 17



Materials Handling.



Storage Doubled With 66% Fewer Manhours

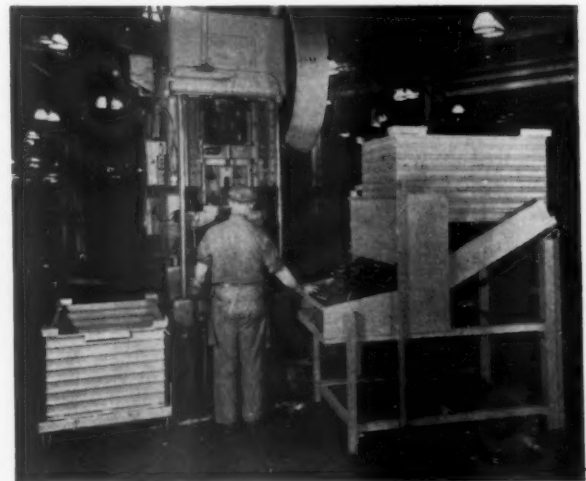
The Warren (O.) Tribune uses an electric-powered 2000-lb. capacity fork truck, equipped with rotary roll clamp to carry newsprint. The truck, which carries and stacks either horizontally or vertically, can grasp rolls short of their maximum diameter, and can thus store absolutely snug. Before, rolls were placed horizontally only two high. Now the first layer is stored vertically, then upper layers are added horizontally, to use all available space. Result: there is 100% greater storage, the truck and one operator do the same work more safely than 3 men did before.

CIRCLE NO. 172 ON INQUIRY CARD—PAGE 17

Work Positioning Stand Slashes Downtime, Ups Press Production

Increase of hourly output and reduction of downtime was a two-fold problem for a press operation in a job stamping plant. Using a positioning stand and drop-bottom box cut downtime per eight hour shift to one hour and raised hourly production by 18.8%. Eliminating operator's bending over and reaching for parts, cut fatigue and brought about faster production speed during entire eight hour shift.

CIRCLE NO. 173 ON INQUIRY CARD—PAGE 17



Power Benches Decrease Inspection Time By 20%

Benches, power adjusted to proper work height have cut inspection time 20% for the Parsons Paper Co., Holyoke, Mass. Built for heavier work loads, these benches permit inspectors to sort paper in 1200-2500 lb. lots. Previously, three men were necessary to supply twelve inspectors with 50-100 lb. lots of paper; now only one lift truck operator is required.

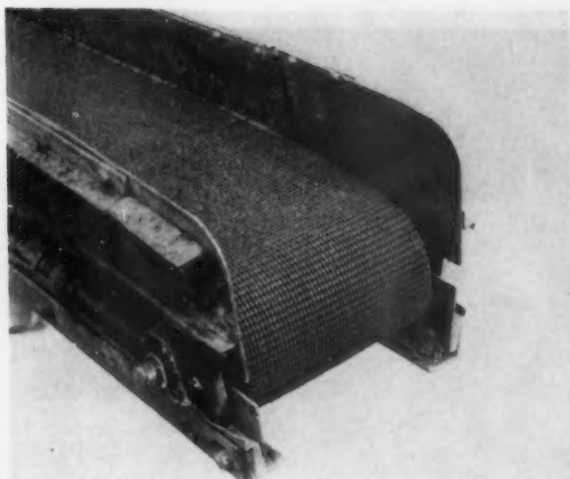
CIRCLE NO. 174 ON INQUIRY CARD—PAGE 17



Handling Costs Cut 35% With Conveyor Belt

A California vineyard has slashed its handling costs an average of \$9250 through the installation of a rough top conveyor belt—a 35% drop each year since 1949. Former methods cost nearly \$14,250 per season of three months' duration. In addition, the conveyor method has proved less damaging to the product and speeded up the entire handling process.

CIRCLE NO. 175 ON INQUIRY CARD—PAGE 17



Telescopic Boom On Lift Truck Cuts Bar Stock Loading Costs

Awkward bundles of steel and brass bar stock, 10 to 15 feet long and weighing 2000 to 10,000 lbs. proved an expensive handling problem for Northwest Automatic Products Corp., Minneapolis. Plant solved problem with telescopic boom, which can extend 10 ft. and has a hook at the end, attached to mast of lift truck. Device stores complete bundles rather than old method of untying and manually carrying one or two bars per trip. Average shipment is now stored in less than one hour by two or three men and trucks.

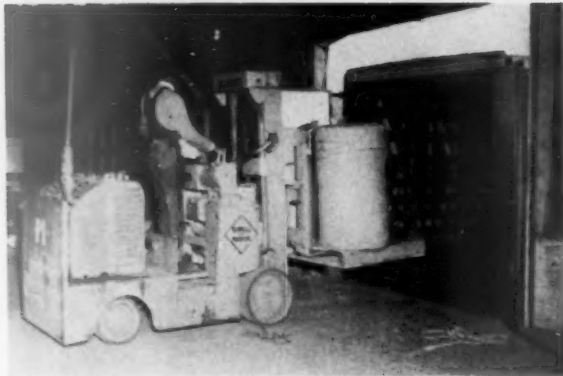
CIRCLE NO. 176 ON INQUIRY CARD—PAGE 17

Scrap Handling Labor Costs Reduced \$126 Per Car

A large metal products manufacturer has reduced his labor cost for loading a 50 ton car of scrap from \$134.80 to \$8.80. Formerly, scrap was moved in bins from production areas to the scrap pile and then hand-shoveled into gondola cars. Now scrap is carried to the scrap pile area by fork truck in drop-bottom boxes. A fork truck then loads the gondola cars by lifting and drop-bottom dumping the boxes, eliminating hand shoveling.

CIRCLE NO. 177 ON INQUIRY CARD—PAGE 17





Big Savings In Carloading

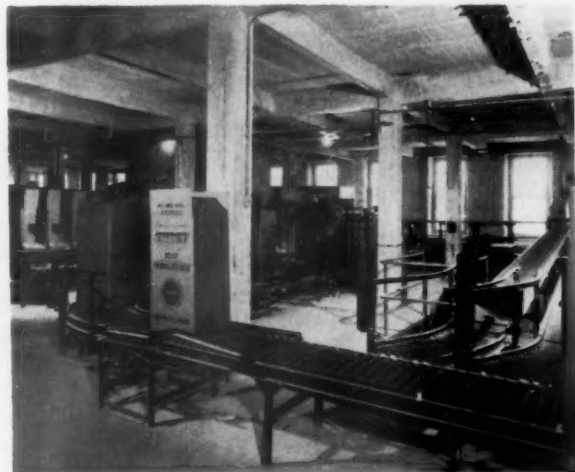
American Finishing Co., Memphis, Tenn. transports chemicals, starches, dyes, paper and cloth with an electric-powered fork truck. The truck stores 54 palletized rolls of paper in a space previously occupied by 15—a 250% increase in storage room achieved by manual methods. Five 800-lb. rolls are loaded at one time—a job formerly done by 8 men. It used to take 3½ hours to load a car—now it's done in 40 minutes.

CIRCLE NO. 178 ON INQUIRY CARD—PAGE 17

Labor Saving, Higher Output, Better Control Through Conveyors

The Ehret Magnesia Manufacturing Co. of Valley Forge, Penna. reports definite labor saving resulting from conveyorizing. However, the greatest advantage from this change is higher output and better control. Their processing requires that each mold be filled at regular intervals and it has to be preheated a precise length of time. The new set-up has substantially reduced the margin for human error and thus increased efficiency.

CIRCLE NO. 179 ON INQUIRY CARD—PAGE 17



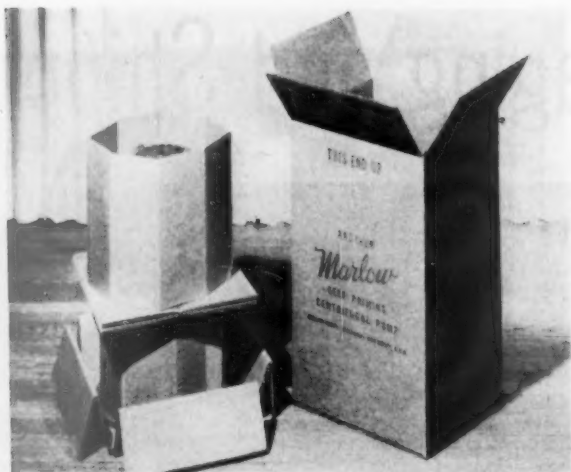
Castings Handling Speeded

To handle incoming skid boxes of castings, a large manufacturer now uses a low-lift platform truck to enter the highway carrier and transfer skids to the receiving dock. Then a high lift truck either stacks the skids or carries them to the production line. Formerly, castings arrived in bulk and, after sorting and counting, were manually loaded into push carts. The new method reduces handling costs by cutting handling time 50%, permits lower freight rates, and makes for more accurate inventory control.

CIRCLE NO. 180 ON INQUIRY CARD—PAGE 17

Packaging and Shipping





Engineered Box Saves 25% In Packing Costs, Ends Damage

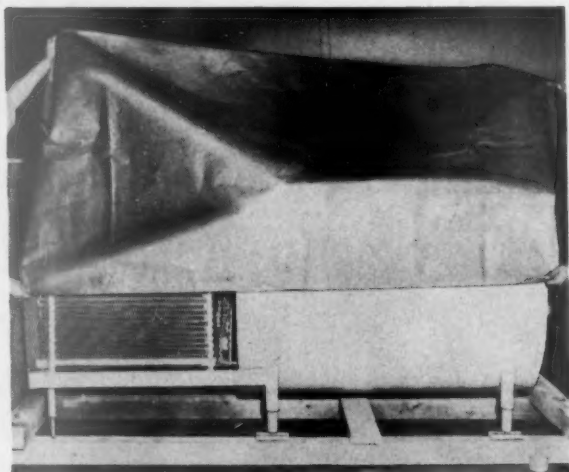
Savings of 25% in packaging costs and complete elimination of damage in shipping centrifugal pumps. That was the result when Marlow Pumps, Ridgewood, N. J., adopted an engineered shipping box. The new container is an adaptation of the regular slotted shipping box, with specially engineered interior packing pieces. Merchandise damage was ended through the complete support and protection on all sides given by the box and packing pieces.

CIRCLE NO. 181 ON INQUIRY CARD—PAGE 17

Inner Packing Material Saves \$5600 A Year, Cuts Damage

Use of new interior corner posts in corrugated box shipments of air conditioner units reduced damage in handling and saved \$5600 in material and labor costs at the Bloomfield, N. J., plant of General Electric Co. Previously, General Electric wrapped and wired six ply corrugated strip pads around the top, bottom and center of each unit. The new corner posts are made of kraft paper shaped in the form of honeycomb.

CIRCLE NO. 182 ON INQUIRY CARD—PAGE 17



Special Bag Cuts Wrapping Time From 15 to 2 Minutes

For shipments that required wrapping and crating Creamery Package Mfg. Co., Lake Mills, Wis., used plain kraft wrapping paper to cover its bulk farm cooling tanks. It took 2 men about 15 minutes to wrap one of these huge units. It now uses bags made of specially treated papers and 2 men only a minute or two to slip the bag over the tank. Because it is cut to exact size there is no waste of paper.

CIRCLE NO. 183 ON INQUIRY CARD—PAGE 17

Packaging and Shipping

Vapor-Wrapper Saves 96 Manhours In Wrapping Press

Miehle Printing Press & Mfg. Co. uses heavy duty volatile corrosion inhibitor treated paper, to package huge presses for shipment. The company estimates that the vapor-wrapper saves about 96 hours on an average press shipment and also states that it is more economical, convenient and cleaner than anything tried before.

CIRCLE NO. 184 ON INQUIRY CARD—PAGE 17



Packaging Tape Saves Firm \$1128 in One Year

Using a tape that requires no wetting agent, a New York instrument company saved 22,500 yards of tape a month in its packaging. The tape's strength and holding power does away with the 6" to 8" overlaps and double-taping the center seams. By using a 3" overlap the company saved 6" on each strip of tape. On the six strips used to tape a carton the company saves 36", plus 18" more because it no longer tapes double seams. Total saving: \$1128 in a year.

CIRCLE NO. 185 ON INQUIRY CARD—PAGE 17

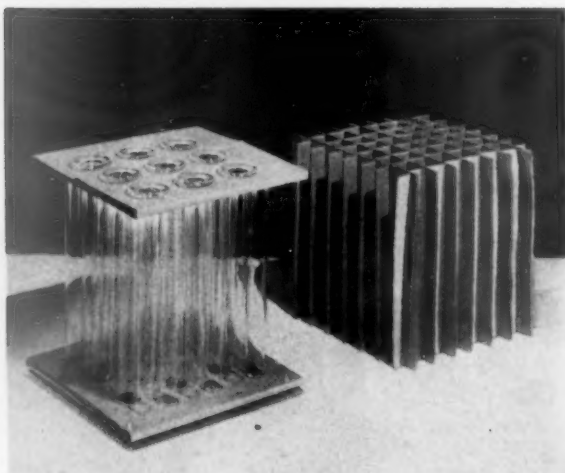


Steel Strapping Cuts Costs 70%; Stops Damage Claims

Ditto Inc., Chicago, recently switched from heavy wooden boxes to lighter, steel wrapped fiberboard cartons for export of several products in its duplicating equipment line. Resultant savings in both packing expenses and transportation costs in these items amount to more than 70%. Not one serious damage claim due to lighter export packing has been made.

CIRCLE NO. 186 ON INQUIRY CARD—PAGE 17





Box Size Reduced; Freight Charges, Packing Time Go Down

Doerr Glass Co., Vineland, N. J., was able to effect a 50% reduction in the size of a box used to ship hydrometer jars. At the same time 5 minutes were cut off the packing time and the freight charge on the box itself was cut 25%. The savings were obtained through a new type box in which ingenious die cut packing pieces at the top and bottom of the box enable 36 jars, instead of 18, to be packed.

CIRCLE NO. 187 ON INQUIRY CARD—PAGE 17

Tape Cuts Water Damage Claims More Than 50% For Truckers

Bad weather during transit was causing expensive water damage claims to the Carolina Freight Carriers Corp., Cherryville, N.C. Suction at trailer doors, created by truck speeds, let rain and snow enter, damaging cargo. The company began sealing doors with a waterproof tape with superior adhesion. In six months, damage claims have been cut 50%.

CIRCLE NO. 188 ON INQUIRY CARD—PAGE 17



Vapor Paper Stops Rust; Cuts Packaging Time 72%

A West Coast pump manufacturer formerly prepared parts for overseas shipment by grease coating, then boxing them. It took 50 minutes to do the job. Now, through the use of a rust preventive paper, packaging time has been cut to only 14 minutes. Parts are given quick and effective corrosion protection, and there's no need for time-consuming application of grease preservatives.

CIRCLE NO. 189 ON INQUIRY CARD—PAGE 17

Creped Wrapping Paper Lowers Shipping Losses For Fabric Maker

Shipping losses were high for Landers Corp., Toledo, Ohio, maker of vinyl-coated fabric for upholstery. Materials used to wrap semi-soft rolls for shipping had to be waterproof, resist punctures, scratches and tears, and "give" a little. Plain kraft wouldn't do the job. The company standardized on a creped roll wrap. The wrap was easier to handle, made neater rolls, and cut shipping losses substantially.

CIRCLE NO. 190 ON INQUIRY CARD—PAGE 17



Self-Adhesive Label Cuts Box Inventories By 50%

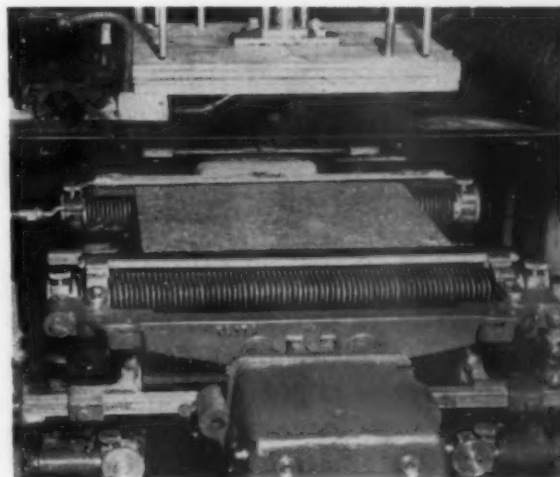
By using a pressure-sensitive self-adhesive label, General Controls Company found it could reduce its box inventories 50%. Formerly more than a hundred different pre-printed boxes were required to package the various automatic controls manufactured, taking up valuable warehouse space to segregate the box inventories according to use. Now a minimum of basic box sizes are maintained by size alone and each box is labeled for contents as it is used.

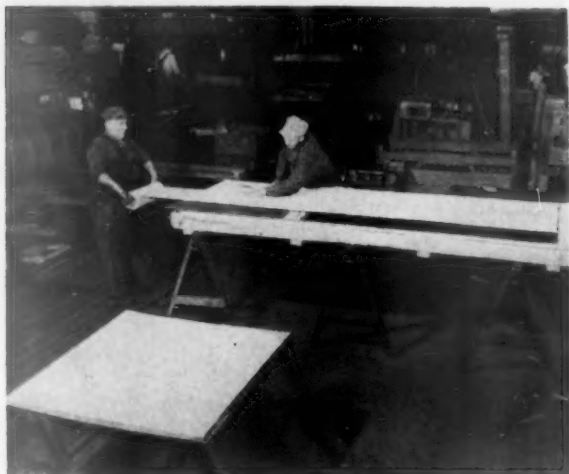
CIRCLE NO. 191 ON INQUIRY CARD—PAGE 17

Brush Strip Recovers 10% Loss In Box Wrapping Machines

Box wrapping machines formerly used rubber rollers to smooth paper wrappers into position. But paper stuck to the rolls, the wrapping machines had to be shut down while the rolls were cleaned, and 10% of production was lost. Rolls of brush strip were developed. Result: continuous operation, recovery of the 10% lost production, 50% longer roll life, and evenly distributed pressure that assures smoother wrappers.

CIRCLE NO. 192 ON INQUIRY CARD—PAGE 17





Tape Covering Reduces Expense In Processing Stainless Sheets

Stainless steel liners of milk tanks, made by Heil Company, Milwaukee, must be free of even tiny flaws, which could harbor harmful bacteria. Prior to using a fabric tape to cover the steel sheets, they could not be worked without becoming dented, marred or scratched. As a result, each flaw had to be removed by tedious, expensive hand operations. Use of the tape has now eliminated 67% of all flaws. The tape is easily applied and removed, yet protects the steel through all its rough handling.

CIRCLE NO. 193 ON INQUIRY CARD—PAGE 17

Plywood Shipping Container Reduces Damage Claims 25%

The Bevador beverage refrigerator shown here in a single cleated plywood case formerly was shipped in two heavy wooden cases. Total gross shipping weight was 1010 lbs. Switch to the new case has reduced shipping weight to 800 lbs., cut damage claims by about 25%. Both parts of the unit are in one package, and speed of crating has been increased.

CIRCLE NO. 194 ON INQUIRY CARD—PAGE 17



Electric Stapler Quadruples Daily Catalogue Mailing

A Winnipeg firm, using electric staplers, has increased its daily mailing of catalogues from 2500 to 10,000. Previously, gummed stickers and hand stapling were used.

CIRCLE NO. 195 ON INQUIRY CARD—PAGE 17

Air Freight Slashes Shipping Costs For Manufacturer

Use of air freight often spells the difference between success and failure when time is running short, according to International Business Machines Corporation, New York City. Using this method for shipping priority items, IBM found that the "blue ribbon" service actually saved money. In one instance, the company saved 50 to 55% on shipping costs on a New York to Chicago shipment. A San Francisco-New York shipment showed a saving of nearly 40%.

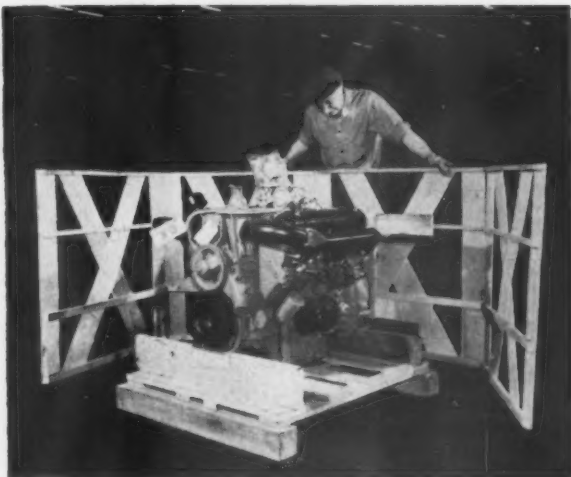
CIRCLE NO. 196 ON INQUIRY CARD—PAGE 17



Wirebound Crate Reduces Weight, Saves Time and Material

Ford Engine & Foundry Div., Ford Motor Co., Dearborn, Mich. packs its 786 lb. Lincoln engine assembly in a scientifically engineered wirebound crate. Compared to the packing method previously used, shipping container tare weight has been reduced about 50% and effected some 35% saving in material, freight and labor. A 1/5th cut has been achieved in original container cost and a 35% reduction in overall packing costs.

CIRCLE NO. 197 ON INQUIRY CARD—PAGE 17



Improved Tagging Operation Brings 60% Savings

Northrup, King & Co., Minneapolis, Minn. has reduced labor cost of bag tagging nearly 60%. Patched tags in gangs with a fastener attached which can be run through an Addressograph are now used. Previously, fasteners had to be attached by Northrup, King since the old type fastener could not be run on the Addressograph.

CIRCLE NO. 198 ON INQUIRY CARD—PAGE 17



Packaging and Shipping



Stapler Saves 40% In Closing Small Shipping Cartons

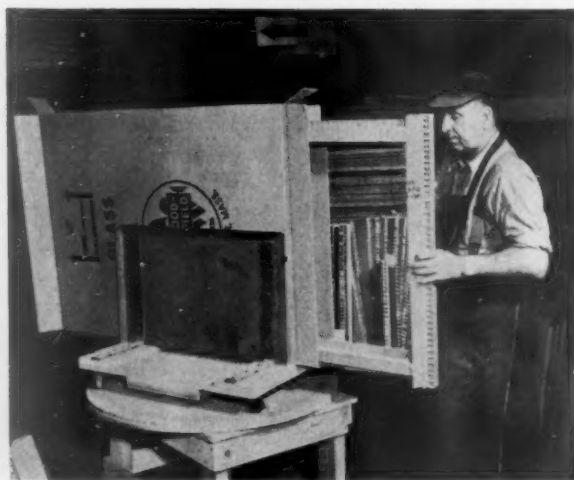
Switching from paper tape to hand staplers for closing small shipping cartons, top and bottom, a West Coast band brake manufacturer saved 40% in production costs. Approximately twice as much work is done per hour by operators, who prefer the stapler.

CIRCLE NO. 199 ON INQUIRY CARD—PAGE 17

Corrugated Box Halves Costs, Reduces Packing Time 50%

The Norton Co. of Worcester, Mass. has adopted a corrugated box for shipment of abrasives and fire brick which weighs and costs approximately 50% less than the five wooden boxes it replaces. In addition, this box cuts packing time nearly 50% and can safely handle loads up to 3500 lbs. It is shipped on an expendable pallet and measures 40"x40"x20".

CIRCLE NO. 200 ON INQUIRY CARD—PAGE 17



'Honeycomb' Packing Piece Saves \$20,000 A Year, Cuts Damages

Kraft paper, shaped in the form of a honeycomb, has eliminated excessive packaging costs and damage claims on framed mirrors shipped by Heywood-Wakefield Co., Gardner, Mass. The company was able to completely change its mirror package through the use of the honeycomb and saved \$20,000 last year in container costs. In addition, only one mirror has been broken since the changeover; twice as many mirrors are packaged per hour and freight costs are lower.

CIRCLE NO. 201 ON INQUIRY CARD—PAGE 17

Maintenance Equipment





Magnetic Pulley Stops Shut-Downs Due To Tramp Iron

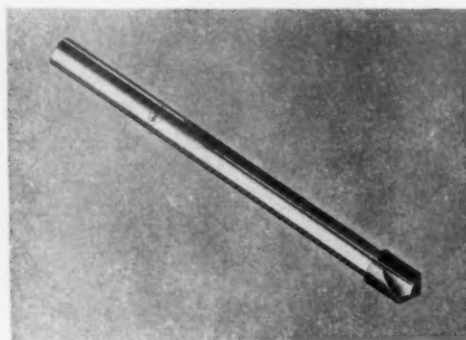
Damage from tramp iron to the coal crusher and coal briquet press of the Johnson Coal Cubing Co., Detroit, Mich., brought shut down time to an average of over 150 hours a year. A non-electric permanent magnetic pulley was installed at the discharge end of a 16' belt conveyor handling the coal. It removes nails, bolts, scrap iron, etc., at the rate of up to 50 lb. a day. Damage to the crusher and grate has been eliminated, and there are no more shut downs. Overall production has been increased by as much as 3 hours weekly.

CIRCLE NO. 202 ON INQUIRY CARD—PAGE 17

Carbide Die Drill Saves Part Worth \$125

While tapping a stainless steel regulator body at Victor Equipment Co., a tap became lodged in the part and could not be removed as the flutes were clogged with chips. A carbide die drill was used to drill the tap to a depth of $\frac{1}{2}$ ". The flutes were then broken off and the tap removed, saving the part valued at \$125 which would otherwise have been scrapped.

CIRCLE NO. 203 ON INQUIRY CARD—PAGE 17



Self-Elevating Platform Cuts Light Maintenance 80%

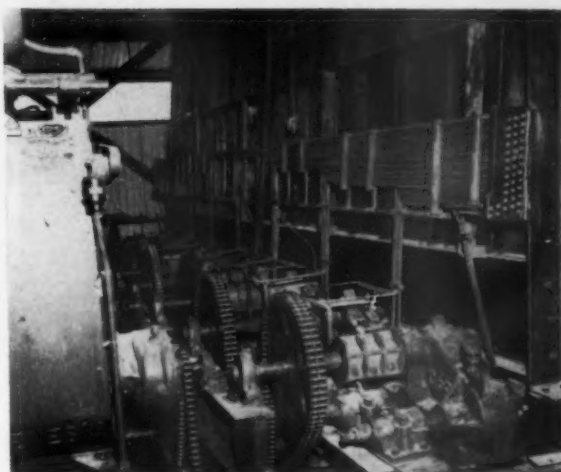
A self-elevating work platform at a midwest gear works has reduced the cost of cleaning and maintaining fluorescent lights by 80%. The versatile unit eliminates ladders and scaffolding. One man rides the battery-powered unit to destination, pushes a button, and is up in the air ready to work. No time is lost moving ladders or carrying tools and equipment. The platform carries everything needed.

CIRCLE NO. 204 ON INQUIRY CARD—PAGE 17

Tubing System Ends Lubrication By Hand; Promotes Safety

Gear boxes on bark feeders in St. Regis Kraft Paper Corporation's Eastport, Fla., plant were formerly lubricated individually by hand. This was almost a continuous job and was a hazard to workers who had to climb over the machinery. A lubrication system with a bank of tube lines connected with special fittings easy to assemble and disconnect was installed. The leakproof system has ended the need for climbing over the gear boxes and cut time required for lubrication.

CIRCLE NO. 205 ON INQUIRY CARD—PAGE 17



Fuel Conditioners Pay For Themselves In Six Months

Fuel conditioners used at the Benjamin Franklin Hotel, San Mateo, Calif., have paid for themselves in six months through reduced maintenance costs and fuel savings on two 50 hp boilers. Better heat exchange resulted in the fuel savings. Maintenance costs were saved as there are no sediments or deposits in the fuel oil lines, strainers or pumps and it is no longer necessary to clean the burner tips.

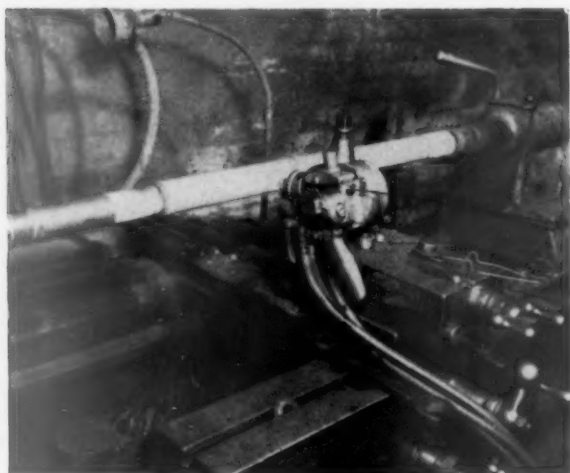
CIRCLE NO. 206 ON INQUIRY CARD—PAGE 17

Hydraulic Control Saves Snow Plow Users \$100 Per Unit

At least five large users have saved an average of \$100 per snow plow by using hydraulic control for plow blades. The control saves on plow cutting edge replacements, reduces the work force, since a one-man crew can often be used, and removes snow faster. The plow blade is raised up to 10 times faster than a hand or electric ram to clear open pavement or hidden obstacles.

CIRCLE NO. 207 ON INQUIRY CARD—PAGE 17





Metallized Rod Lasts 35 Times Longer Than Original

An oil company had trouble with rods in a steam pump used for pumping crude oil "bottoms." Grit, dirt and other foreign matter in the bottoms wore out the original cold-drawn steel rod of the pump in just 48 hours. A metallized rod was substituted. It lasted for four weeks and the shaft could be re-metallized three times before having to be scrapped for a total life of 12 weeks against 48 hours for the original rod.

CIRCLE NO. 208 ON INQUIRY CARD—PAGE 17

Centralized Lubrication Ends Down Time, Ups Production

When lubricated by hand methods, the punch presses of General Electric Company at Schenectady, N. Y., were serviced only once each shift. The ways of the slides had to be reconditioned every six months. The once-a-shift lubrication required 18 minutes per press during which time production was at a standstill. A centralized lubrication system was installed. The presses now receive automatic lubrication every 15 minutes without downtime and have functioned for 2 years without reconditioning.

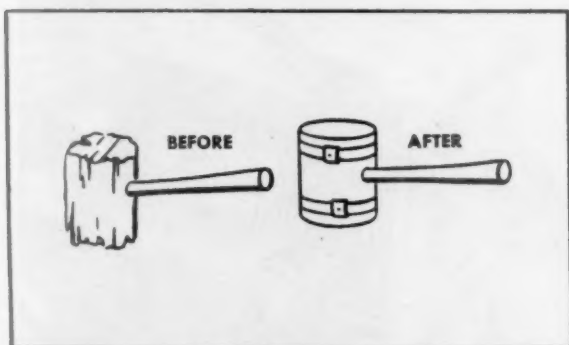
CIRCLE NO. 209 ON INQUIRY CARD—PAGE 17



Use of Clamps on Mallets Saves Pipe Manufacturer \$2246 A Year

A pipe manufacturing plant uses hickory mallets to knock sand cores out of bell and spigot hub castings. The mallets were made in the plant's pattern shop, and were used up at the rate of 12 a day. The company tried reinforcing the mallet heads with clamps. This raised the cost of each mallet—but reduced the number of mallets used to one a day. Result, annual cost of mallets was reduced to \$312—a yearly savings of \$2246.

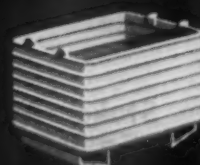
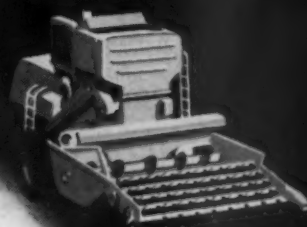
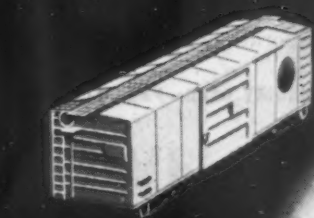
CIRCLE NO. 210 ON INQUIRY CARD—PAGE 17



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Welding Electrode Prevents Loss of \$70,000 in Production

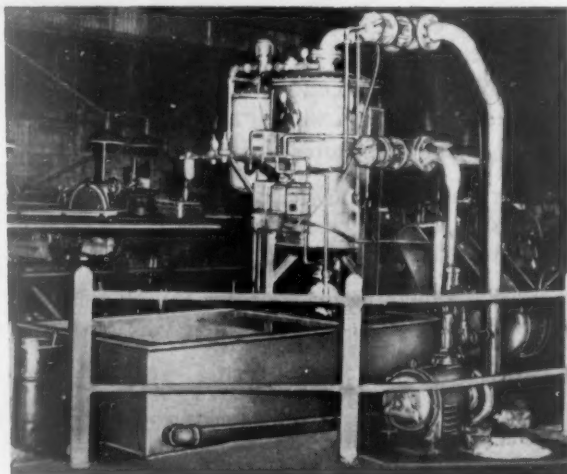
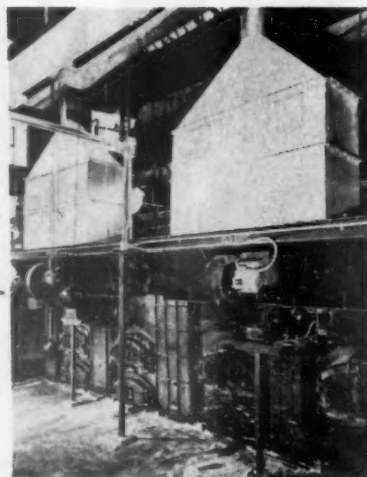
Cast iron water jacket casings on a butane pump cracked during a prolonged cold spell up in Canada last year. New castings would have cost \$1200. Delivery would have taken 17 weeks, costing the refinery nearly \$70,000 in lost production. Using electrodes specially developed for welding heavy sections of cast iron, they repaired the crack and had the pump back in operation in four days.

CIRCLE NO. 211 ON INQUIRY CARD—PAGE 17

Stoker Adds 30% Capacity To Boiler, Aids Efficiency

A large veneer and lumber mill increased the capacity of a boiler fired with hogged wood refuse 30% by installing a new type of stoker. It also burns the fuel more efficiently. The stoker employs a spray-spread system for introducing hogged fuel into the furnace, which is a radical departure from the conventional "Dutch Oven" and "pile" burning of refuse fuel.

CIRCLE NO. 212 ON INQUIRY CARD—PAGE 17



Coolant Clarification System Saves \$5000, Ups Capacity

Recirculation of oil contaminated by fine chips and abrasive particles dulled grinders' cutting edges, loaded the stones, and eventually necessitated replacement of one wheel per month at Globe Steel Tubes Company. An automatic clarifier was installed to provide continuous centralized filtration of the grinding coolant. Here's what it accomplished: machine production capacity went up 1872 hours annually; the company saves \$5000 a year in sump cleaning operations, wheel consumption and coolant replacement.

CIRCLE NO. 213 ON INQUIRY CARD—PAGE 17

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Electric Tool Saves \$6000 A Year On Single Operation

A Maryland welding company is saving more than \$6000 a year through the use of an electric tool to remove studs from railroad diesel cylinder liners. On a series of 50 liners, stud removal with the tool takes one man 2½ days per week, or 20 manhours. It formerly took 2 men 5 days each week, or 80 manhours.

CIRCLE NO. 214 ON INQUIRY CARD—PAGE 17

Boiler Modernization Cuts Operating Costs \$67,000 Yearly

Modernization of its power plant has brought big savings and increased efficiency to Bernheim Distilling Company, affiliate of Schenley Industries, Inc., Louisville, Ky. Three boilers now provide more steam than six boilers did before modernization. Automatic combustion controls have been installed. Results: large fuel savings, virtually smokeless operation, greatly reduced maintenance costs. Overall saving in operating costs—\$67,000 annually.

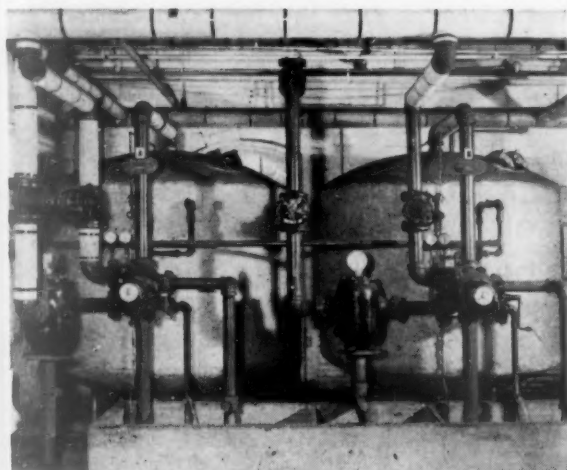
CIRCLE NO. 215 ON INQUIRY CARD—PAGE 17

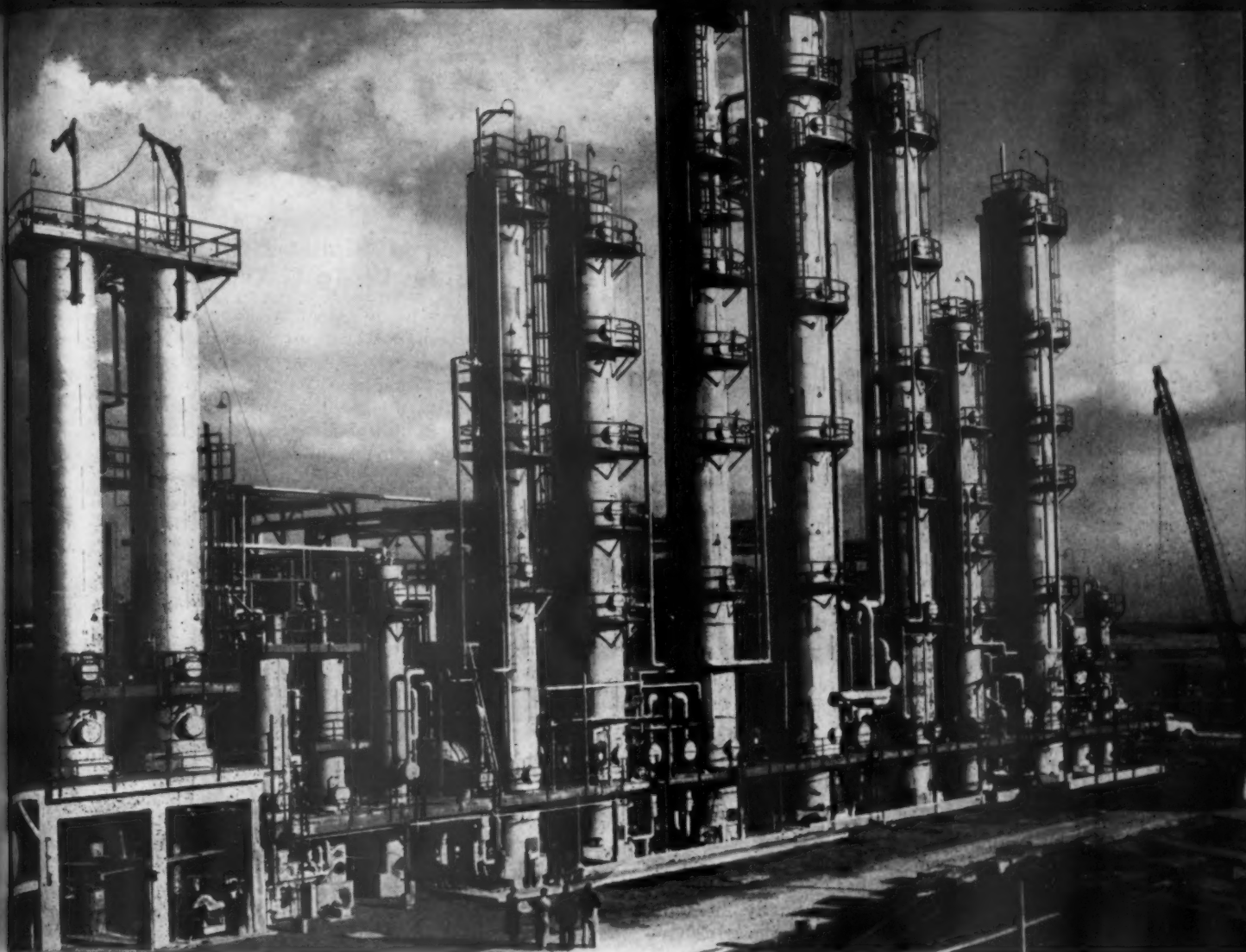


Soft Water Unit Installed; Mill Saves \$12,150 Yearly

Creek water used by Empire Worsted Mills, Jamestown, N.Y., became polluted, color rose to 60 ppm and turbidity to 25 ppm. This caused stains, off-shades and increased fabric re-runs. In addition, water hardness of 6 grains wasted soap and detergents, scaled boilers and wasted fuel. The company installed 4 pressure filters and feeders for alum, alkali and chlorine dosages, and two water softeners filled with a high capacity zeolite resin. Soft, clear water resulted, and dyeing output was increased. Lots are now seldom rerun. Less soap and fuel are used. Savings: \$12,150 yearly.

CIRCLE NO. 216 ON INQUIRY CARD—PAGE 17





SUN OIL'S PETROCHEMICAL PLANT

now making high-purity aromatics

NITRATION
BENZENE

NITRATION
TOLUENE

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The new \$15 million Sun Oil Company petrochemical plant in Marcus Hook, Pa., can now supply benzene, toluene and xylene that meet a new high standard of purity. It is the largest and most modern plant on the East Coast producing these aromatics from petroleum.

Precision instrumentation, combined with the most modern available facilities, provides constant control of every step in the refining process. Only

selected feed stocks are used. The result is month-in, month-out sameness—even with high volume throughput—plus new versatility and efficiency.

Other petrochemicals produced by Sun Oil Company include propylene trimer and tetramer, sulfonates, and a new type of high-molecular-weight naphthenic acid that is practically free of oil. For a technical bulletin describing any of these Sun petrochemicals, write Department PG-5

INDUSTRIAL PRODUCTS DEPARTMENT
SUN OIL COMPANY



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Lining Multiplies Life of Chutes Up To 12 Times

A leading heavy equipment manufacturer found that the maintenance costs of sand blast chambers could be cut as much as 75% by the use of a chute lining. Because of its outstanding resistance to abrasion, the life of sand sluices and rock chutes has been multiplied as much as 12 times. The rubber lining can be nailed, bolted, or pegged into place. It can be lapped, butted or spliced.

CIRCLE NO. 217 ON INQUIRY CARD—PAGE 17

Maintenance Costs Reduced By \$72,000; Production Upped 20%

Spicer Manufacturing Co., Toledo, Ohio, installed a centralized lubrication system on 60 Bullard Mult-au-Matic lathes. Maintenance costs were reduced 60% or \$72,000 annually including labor and material. Production increased 20%—equal to a saving of 12 additional machines at an expenditure of \$816,000. Direct saving in labor cost amounted to \$25,000 a year.

CIRCLE NO. 218 ON INQUIRY CARD—PAGE 17



Tire Cost Reduced 40%

A general hauling company has reduced tire cost 40% while the original tread mileage has been doubled. It uses nylon tires. The company has capped these nylon tires as many as 8 times with 100% effectiveness even after the tire has been worn down to the original tread.

CIRCLE NO. 219 ON INQUIRY CARD—PAGE 17

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TAYLOR POLYESTER GLASS RODS

An unusual material developed by Taylor—polyester glass rods in natural, white, black and ten attractive colors—offers unlimited possibilities in many of the products you manufacture. For the first time, you can have a glass-reinforced plastic that is uniformly colored all the way through. Drill it . . . cut it . . . grind it . . . you'll see no fibrous appearance of glass filaments.

Although this new material weighs only one-fifth as much, it possesses flexural and tensile strength equal to that of low-carbon steel. It's non-corrosive, and resists deformation from bending. Picture how you can use its color for decoration, identification, or coding . . . its high strength-to-weight ratio for structural parts . . . its excellent electrical properties in shafts for electronic components.

Taylor specialists will be glad to talk over the ways you can put this material to work. They'll be glad to discuss, too, the improvements in production and product quality that you can realize through the use of Taylor Vulcanized Fibre and Taylor Melamine, Phenolic and Silicone Laminates.

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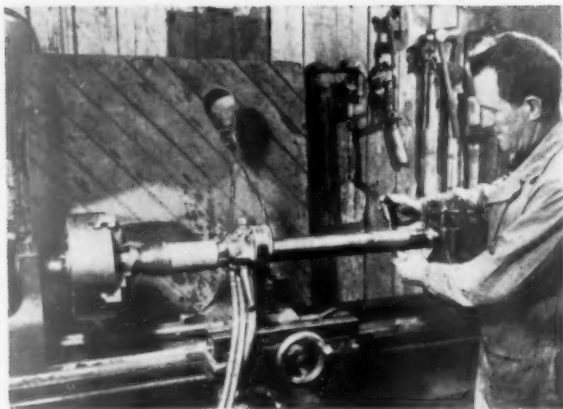
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quantities include:**

Natural . . . white . . . yellow (two shades)
. . . buff . . . orange . . . pastel red . . .
red . . . dark red . . . brown . . . green
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SPECIFICATIONS: GPG Rod

Flexural strength 65,000—85,000 psi.
Compressive strength (radial) . . . 950—1,100 psi.
Arc resistance 120 sec.
Water absorption 0.10—0.20%
Resin content 50%
Specific gravity 1.60
Standard diameter $\frac{1}{8}$ " to $\frac{1}{2}$ "
Standard lengths 24" to 84"

Also available Chalk-Filled (GPG-C) and Flame-Retardant (GPF). Inquiries invited for larger diameters, longer lengths and special shapes.



Lathe Spindle Salvaged For \$30; New One Would Cost \$200

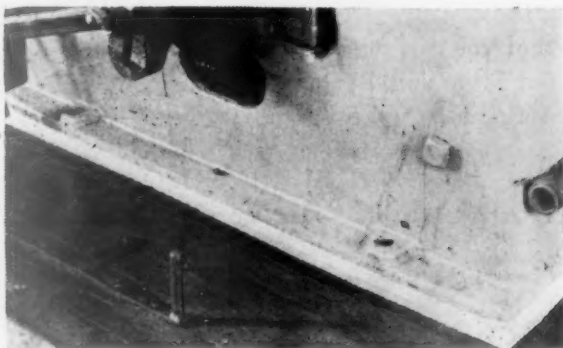
By use of a metallizing process a manufacturer built up a worn lathe spindle at a total cost of \$30.00 with .80 carbon steel. Replacement of this lathe spindle would have cost \$200.00. Also, the sprayed metal improved lubrication to provide longer service life than a new part.

CIRCLE NO. 220 ON INQUIRY CARD—PAGE 17

Finish Failures Eliminated

Richfield Oil Company protects the engine of its drilling equipment with a special finish which is also applied to the truck used in connection with the rig. The equipment is cleaned at frequent intervals with strong caustic solution to remove accumulated oil and dirt. The finish currently used stays on without loss of color or deterioration of surface after months of use, whereas previous finishes failed after first few cleanings.

CIRCLE NO. 221 ON INQUIRY CARD—PAGE 17

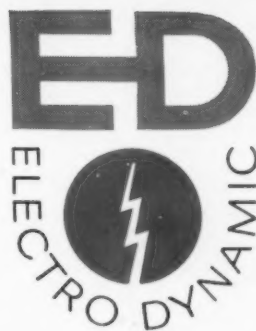


Floor Pad Installation Cost Is \$25 Cheaper

Anti-vibration floor pads bonded with vinyl resin were installed under a 3000 lb. cotton loom in a Southern mill. The cost was only a little more than \$9.00 counting labor and material cost and loss in production time. Mounting felt pads under the same machine would cost approximately \$34.00. Because they eliminate drilling for holes and precleaning for cement, these pads are easy to apply whenever machines are relocated.

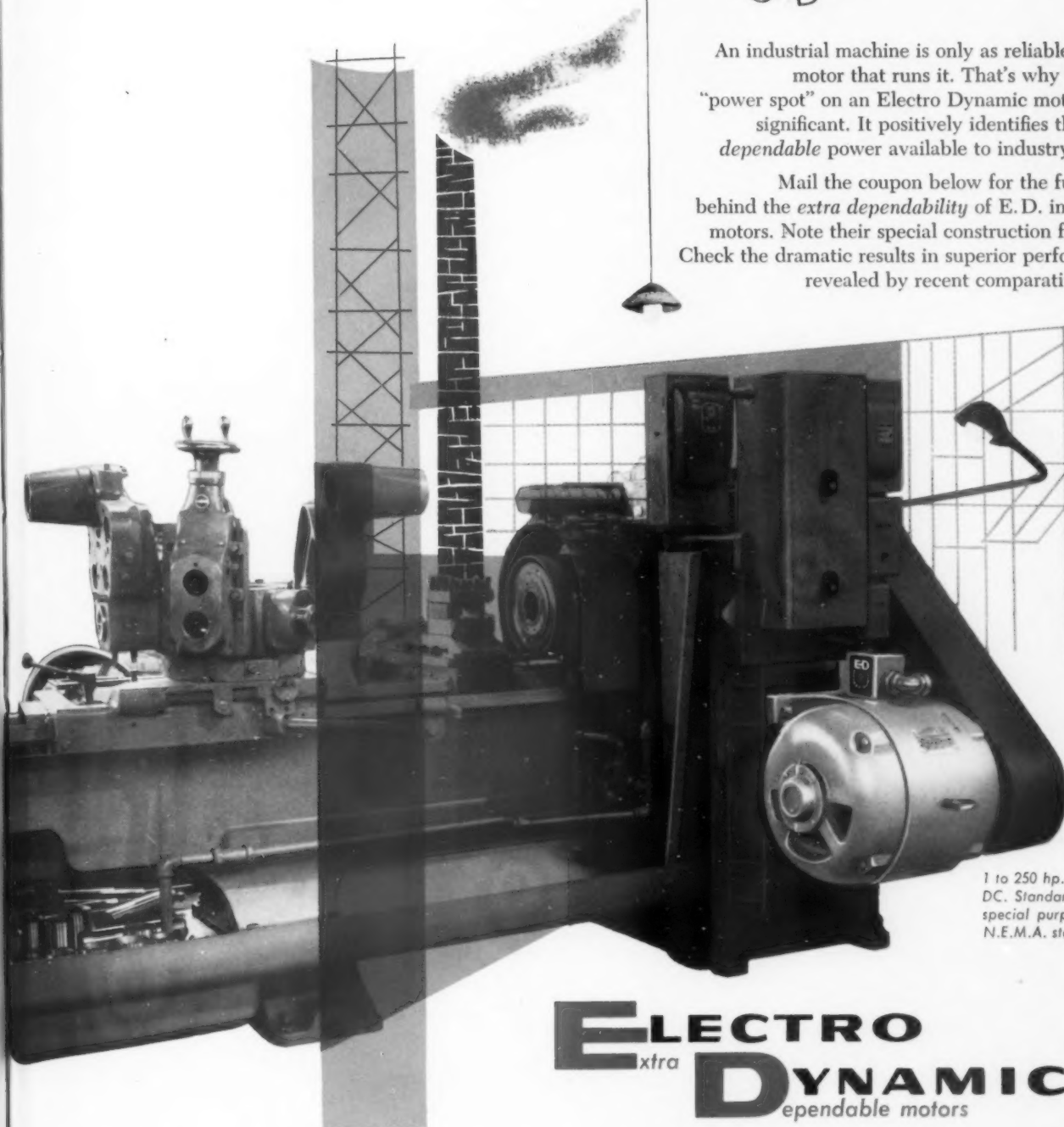
CIRCLE NO. 222 ON INQUIRY CARD—PAGE 17

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Previous Belts Had 3-Month Life; Replacements Last Years

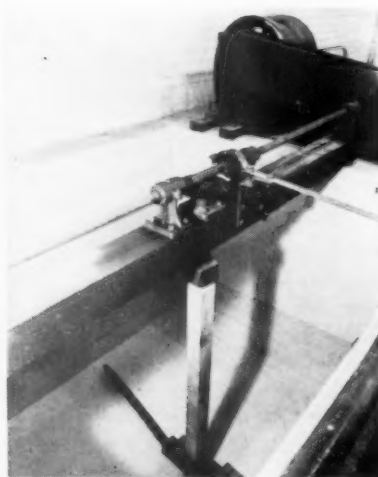
Belts used for power transmission by a Georgia lumber company would not stand up to the constant 150 hp. load and the 1200 rpm. speed. They required frequent takeups and were lasting three months at the most. Another make belt was substituted. It has already lasted over four years and has saved \$750 in replacement costs alone.

CIRCLE NO. 223 ON INQUIRY CARD—PAGE 17

Enamel Ends Tank Damage, Simplifies Maintenance

Alum solution in a concrete tank in the water filter plant of the Celanese Corp., at Belvidere, N.J., was eating through the concrete and loosening mortar in the brick wall behind the tank. After painting the tank with a special enamel coating, the damage was stopped. Nine months after application of the enamel, the tank is in excellent condition and maintenance has been simplified and speeded.

CIRCLE NO. 224 ON INQUIRY CARD—PAGE 17

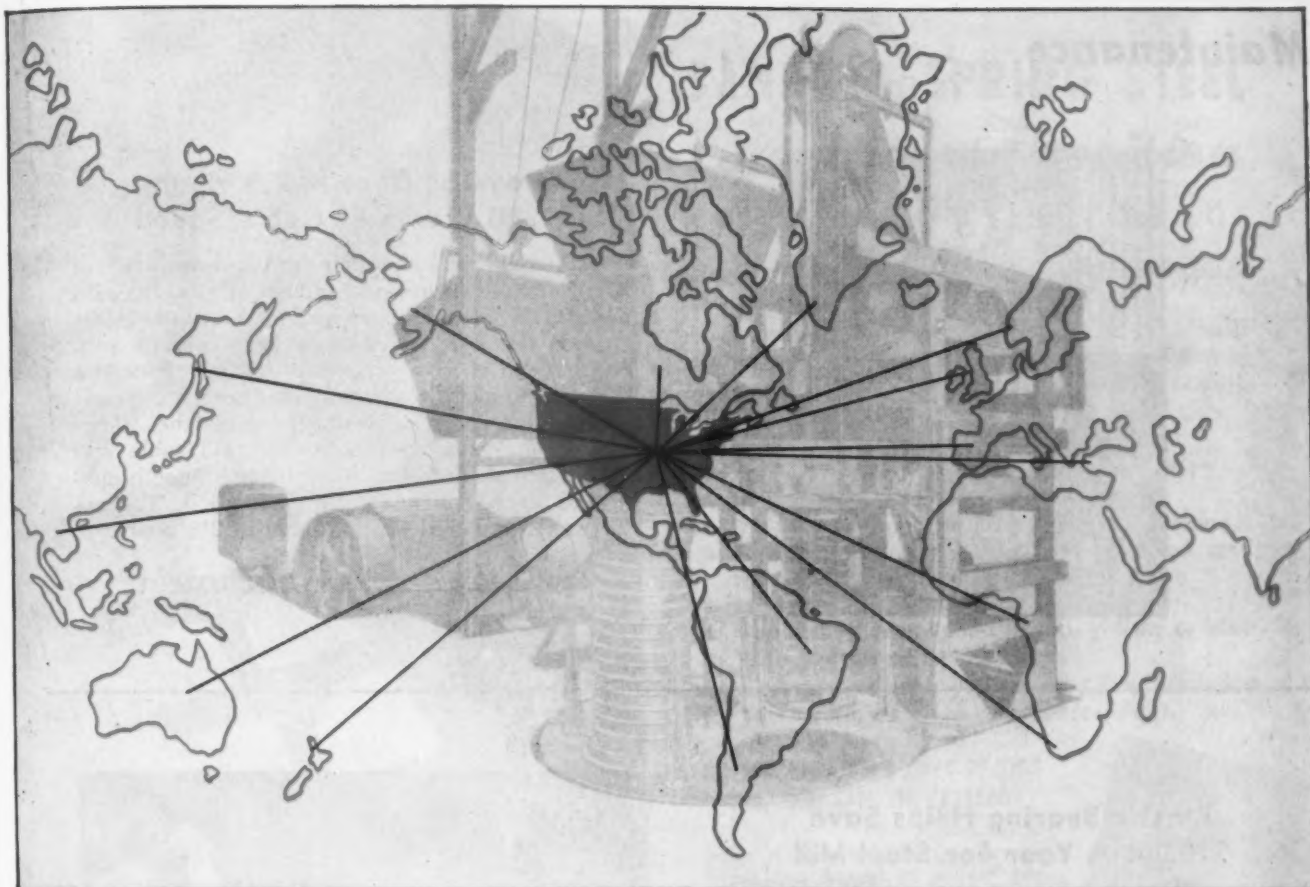


Filtration System Ends Costly Repairs and Shutdowns

A filtration system installed by a large Canadian paper company makes it possible to use the condensate from its steam generating units as boiler water. The condensate contained about 24 ppm of oil picked up from reciprocating engines, steam driven pumps, etc. The oil-contaminated condensate damaged boiler tubes resulting in costly repairs and shutdowns. Since the installation of the filter system no trouble has occurred as 65 pints of oil are removed from the condensate daily, while the effluent consistently contains less than 1 ppm of oil.

CIRCLE NO. 225 ON INQUIRY CARD—PAGE 17



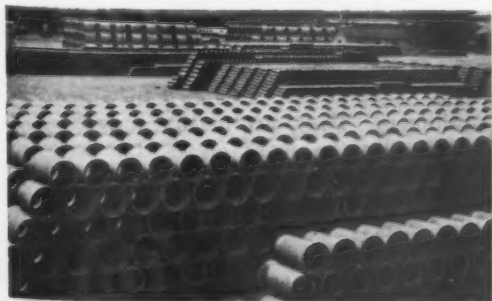


From Sioux City, Iowa:

CITIES SERVICE OILS AND GREASES SENT ALL OVER THE WORLD WITH McCracken Machines!



"OUR FINISHED MACHINES are completely serviced with Pacemaker 2 hydraulic fluid, Optimus 4 oil in the transmission and Trojan M for bearing grease."



CORRUGATED CONCRETE PIPES, used for sewer, culvert and irrigation work, are one of industry's most vital tools. McCracken Machines make the very finest.

ONE CITIES SERVICE PRODUCT SOLD MANUFACTURER ON THE COMPLETE CITIES SERVICE QUALITY LINE!

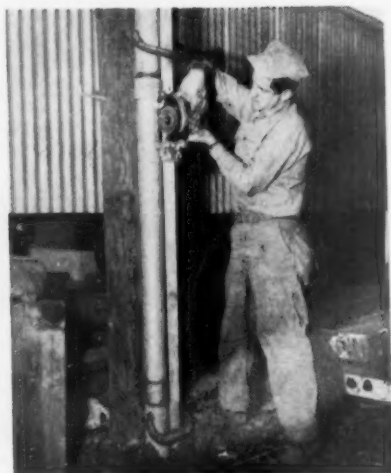
During the early part of World War II, Concrete Pipe Machinery Co., manufacturers of McCracken Machines, called in a Cities Service Lubrication Engineer for answers to some tough metal-cutting problems. On his recommendation, they tried Cities Service Cutting Oil, Chillo 93. Finished work was so improved and tool life so prolonged, that Concrete Pipe had a complete lubrication survey made of their plant.

THIS CAREFUL SURVEY PROVED THAT THE COMPLETE CITIES SERVICE LINE COULD DO THE BEST JOB FOR THEM. Electric motors, spindles, gear reducers, air compressors . . . drilling, grinding, machining of cast iron parts, threading, tool and die work . . . hydraulic systems, bearings, transmissions . . . Cities Service Industrial Oils, Greases and Cutting Oils did better on every job! Concrete Pipe Machinery Co. says: "They are giving us outstanding service, and availability and delivery have always been excellent."

If you'd like to talk to a Cities Service Lubrication Engineer, write Cities Service Oil Company, Sixty Wall Tower, New York 5, New York, or call the office nearest you.

CITIES SERVICE
QUALITY PETROLEUM PRODUCTS

For More Information Circle No. 469 on Inquiry Card—Page 17



2-Day Job Done in 2½ Hours; \$1300 Worth of Cable Saved

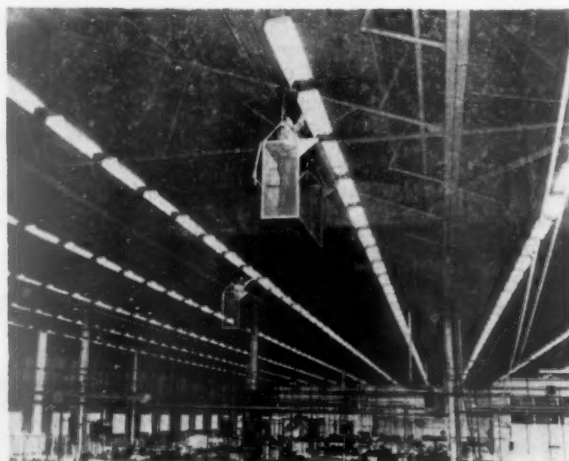
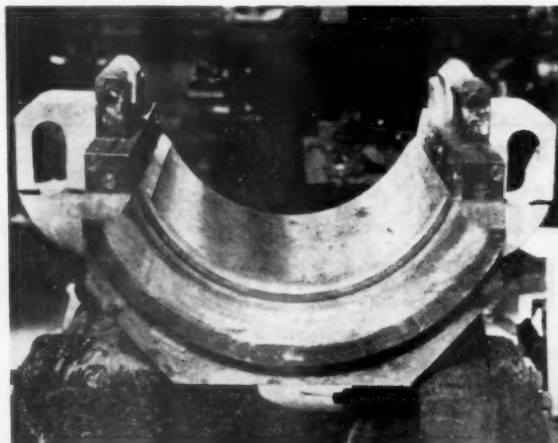
A Dallas electrical repair firm had two choices in a job at a burned-out industrial site. It could melt 60 lbs. of insulation wax in the transformer, remove the old cable, thread the conduit with \$1300 worth of new cable—a 2-day job. Instead a 6" portable electric saw was used to cut the conduit, collars and sidewall, lowering the transformer on its outdoor pole. The old cable was pulled into the building for splicing. Smooth cutting of the saw turned out a perfect job. The cable was saved, and the job done in 2½ hours.

CIRCLE NO. 226 ON INQUIRY CARD—PAGE 17

Plastic Bearing Helps Save \$10,000 A Year For Steel Mill

This 22" diameter blooming mill bearing, made of laminated plastic, permitted the 40" steel mill in which it was installed to save \$10,000 yearly. The bearing lasted longer (10 times the life of babbitt), fewer roll alignments were necessary, grease was eliminated (the bearing is water lubricated). Other advantages: better sections, increased tonnage, cleaner mill and improved roll neck surfaces.

CIRCLE NO. 227 ON INQUIRY CARD—PAGE 17



Cable Cage, Lamp Replacement Cut Maintenance Costs 75%

Specially installed cable cages, combined with a plan for replacing lamps, has reduced lighting maintenance at North American Aviation, Inc., Los Angeles, by 75%. Cages, suspended 30 ft. in the air, are entered from either end of the 450 ft. long building and will hold two 200-lb. men with 150-lbs. of equipment. They are easily moved along the cableway by the work crews. Lamps are replaced at 70% of the average rated life. Cleaning and changing assures brighter light as well as the lower costs.

CIRCLE NO. 228 ON INQUIRY CARD—PAGE 17

SANDVIK SPRING STEEL

Duplicates Precision

COIL AFTER COIL, LOT TO LOT

For your application, Sandvik's accuracy of gauge assures continuous, uniform precision.

An accurate "mike" will tell the story. It will show your specified gauge repeated consistently both across and along the strip on coil after coil, lot to lot.

Sandvik strip steels are available:

- Precision rolled in thicknesses from .001"
- In straight carbon and alloy grades
- In special analyses for specific applications
- Annealed, unannealed or hardened and tempered
- In a wide range of widths
- Unpolished or polished bright, yellow or blue
- With square or round edges

Phone, write or wire your nearest Sandvik office for further information or technical help.

DO YOU HAVE YOUR COPY OF THIS FREE, NEW SANDVIK CATALOG?

Gives thickness, width, hardness, types of edges and weight in pounds per hundred feet. Also useful conversion tables. Write, on your letterhead, today.



SOME SANDVIK SPECIALTY STRIP STEELS

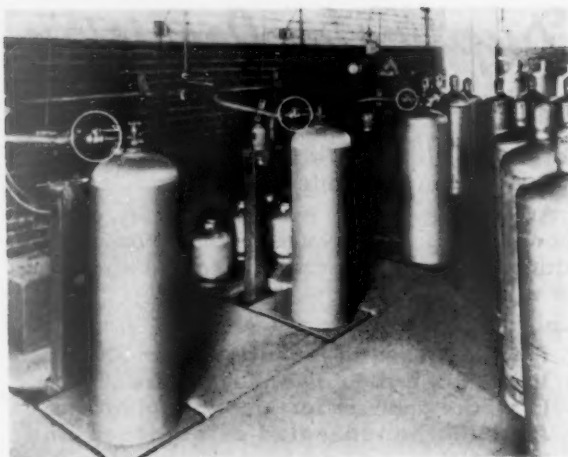
Steel for Textile Machine Parts
Band Saw Steels; Metal Band,
Wood Band & Spring Temper
Camera Shutter Steel
Clock and Watch Spring Steels
Compressor Valve Steel
Doctor Blade Steel
Feeler Gauge Steel
Knife Steels
Razor Blade Steel
Reed Steel
Shock Absorber Steel
Sinker Steel
Spring Steels
Trowel Steel
Vibrator Reed Steel, etc.



SANDVIK STEEL, INC.

111 EIGHTH AVE., N.Y. 11, N.Y. WAtkins 9-7180
230 N. Michigan Ave., Chicago 1, Ill., FRanklin 2-5638
1736 Columbus Rd., Cleveland 13, Ohio, CHerry 1-2303
3609 E. Olympic Blvd., Los Angeles 23, Cal., ANgelus 3-6761
SANDVIK CANADIAN LTD., P.O. 430, Station O, Montreal 9, P.Q.
SANDSTEEL SPRING DIVISION, New York, Industrial Springs.
SANDVIK SAW & TOOL DIVISION, New York, Saws and Tools.

For More Information Circle No. 470 on Inquiry Card—Page 17



Ball Valves Up Production, Cut Maintenance In Propane Handling

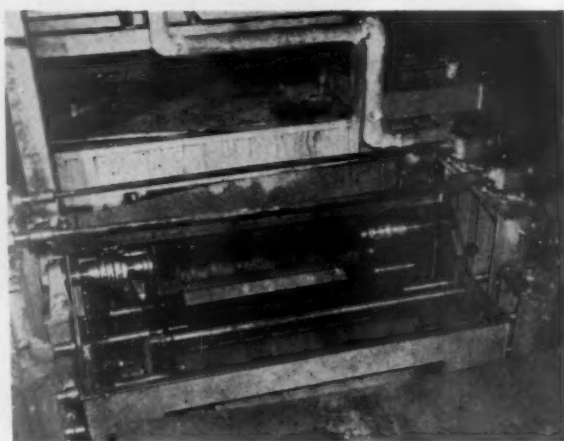
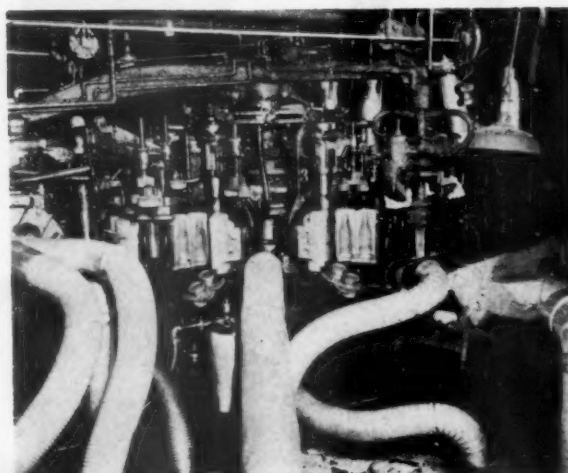
Shipments of more than 400 tanks of bottled gas per day has been obtained at a large propane plant through the installation of ball valves. Due to full flow without change in shape or volume of fluid stream, quick opening and closing, greater wear resistance and leakproof seals, the plant has found that maintenance, also, has been cut to the barest minimum.

CIRCLE NO. 229 ON INQUIRY CARD—PAGE 17

Thread Repair Time Slashed From 2 Hours To 10 Minutes

Stripped threads in the neck rings of glass container molds were expensive to repair by the build-up-by-weld method previously used by Glenshaw Glass Co., Glenshaw, Pa. Eliminating time consuming sandblasting, drilling and welding and the danger of mold warpage, the firm now handles the problem by using wire screw thread inserts. Wear resistance of the threads is greater and the surface is harder and the finish more accurate.

CIRCLE NO. 230 ON INQUIRY CARD—PAGE 17



Brass Mill Saves 420 Hours Per Year In Replacing Brushes

Getting brushes that would last in pickling and annealing machines, was a problem for a large brass mill. Switching to a different brand, they found the new brushes lasted six months compared to nine days for the old ones. In replacement time that meant 420 hours, or ten weeks, time per year. This is based on the 2½ hours needed to change the brushes and the fact that the mill uses six pair. During the year, the new brushes used only 30 hours replacement time compared to 450 hours for the old ones.

CIRCLE NO. 231 ON INQUIRY CARD—PAGE 17



For address of nearest branch see "Tools-Electric"



... there's a Black & Decker Service Branch within 24 hours

That's right! No matter where you're located—at Times Square or Twin Forks—there's a Black & Decker Service Branch within 24 hours of you, completely equipped to give you expert, economical repair work or preventive maintenance on your B&D Tools!

What's more, this nationwide network of B&D Service Branches is company-owned-and-operated, not small repair shops "licensed" by a manufacturer. They offer you factory-trained mechanics and genuine replacement parts. They interpret our Service Policy and Guarantee to your best interest, because they're operated for your convenience and satisfaction!

Check your B&D Tools now! Send those in need of service to your nearest B&D Service Branch, and they'll soon be back on the job with all their original power, speed and accuracy! THE BLACK & DECKER MFG. Co., 607 Pennsylvania Ave., Towson 4, Maryland.

Where Are You? One of these 37 B&D Branches is near you!



Atlanta 3, Ga.
Baltimore 11, Md.
Birmingham 3, Ala.
Boston 35, Mass.
Buffalo 9, N. Y.
Charlotte 6, N. C.
Chicago 7, Ill.
Cincinnati 2, O.
Cleveland 15, O.
Dallas 7, Tex.
Denver 4, Col.
Des Moines 12, Iowa
Detroit 2, Mich.
Houston 3, Tex.
Indianapolis 2, Ind.
Kansas City 8, Mo.
Los Angeles 7, Calif.
Louisville 9, Ky.
Memphis 6, Tenn.

Miami 37, Fla.
Milwaukee 13, Wisc.
Minneapolis 8, Minn.
Newark 5, N. J.
New Orleans 12, La.
New York 13, N. Y.
Oklahoma City 6, Okla.
Omaha 2, Neb.
Philadelphia 3, Pa.
Pittsburgh 13, Pa.
Portland 9, Ore.
San Francisco 24, Calif.
Seattle 9, Wash.
St. Louis 10, Mo.
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Toronto 2, Ont.
Montreal 14, P. Q.
Winnipeg, Man.

LEADING DISTRIBUTORS EVERYWHERE SELL



Black & Decker

PORTABLE ELECTRIC TOOLS

WORLD'S LARGEST, MOST COMPLETE LINE



Outside Lamp Maintenance Crews Give \$1200 'Bonus' Per Year

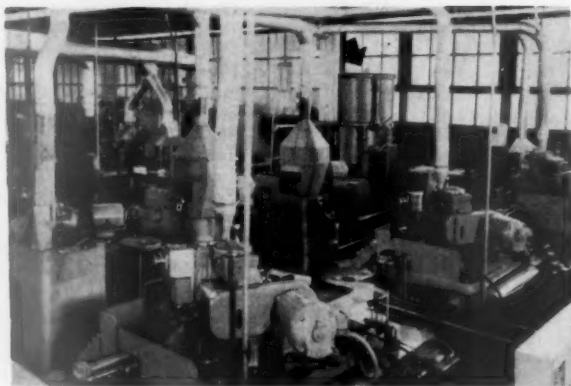
As a result of using an outside maintenance company to handle its lighting fixtures, GE's Cleveland Equipment Company has realized a "bonus" of \$1200 in maintenance expenses and still obtains maximum good lighting. Changing lamps periodically, usually at half life, plus the washing of all fixtures during bulb change has not only resulted in better light, but also in relieving of plant crews from light maintenance to more vital tasks.

CIRCLE NO. 232 ON INQUIRY CARD—PAGE 17

Powder-Actuated Tools Save 50% In Maintenance Operations

Costs of fastening drive pins or threaded studs in steel or cement have been cut 50% in maintenance operations by Glenn L. Martin Co., Baltimore, through powder-actuated tools and fasteners. Using the tools, one man can do a job of fastening a fence to a cement base in a couple of hours. Normally the detail takes three men a shift and a half. Powder-actuated equipment saves tedious drilling or moving about of electric drilling equipment.

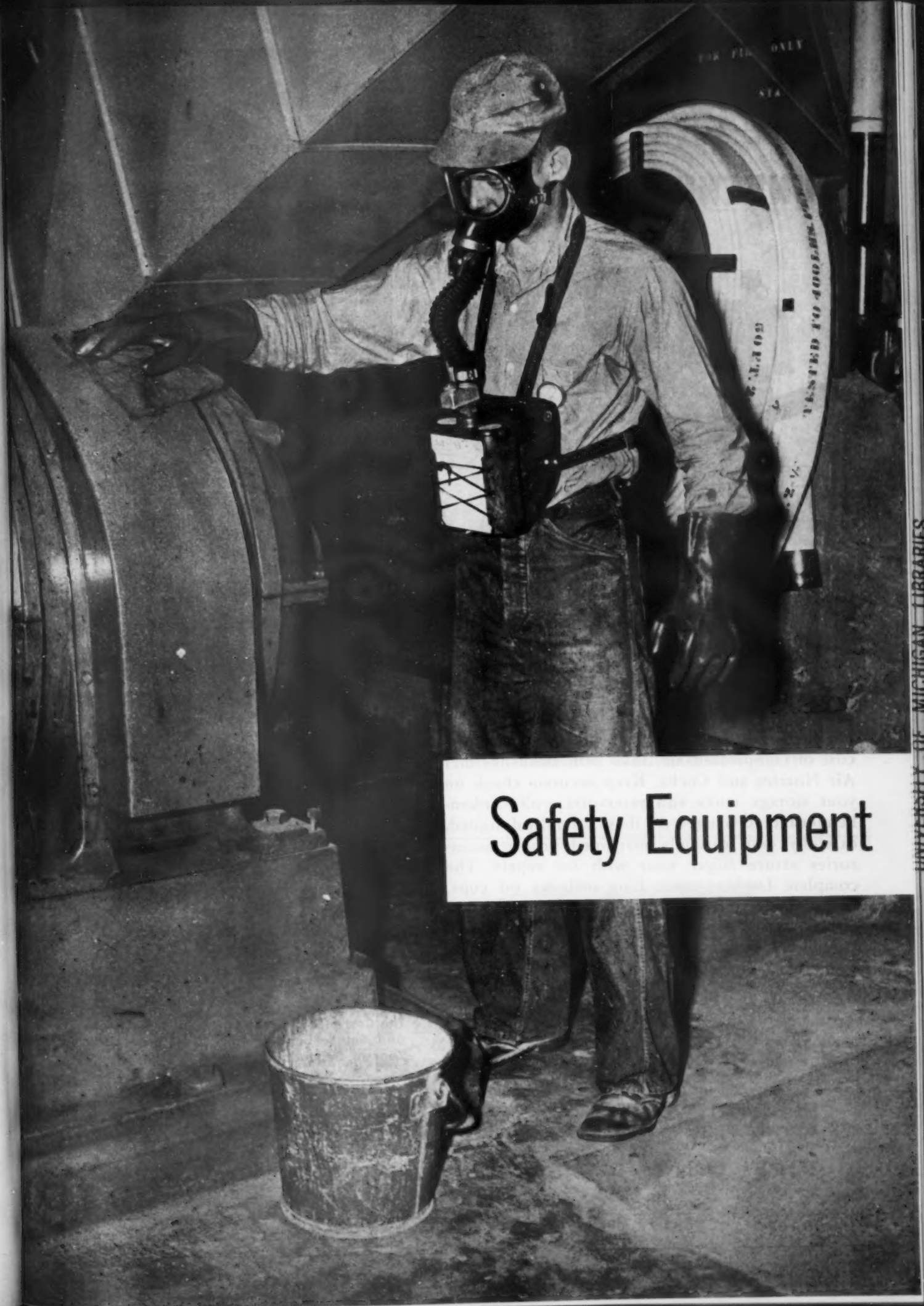
CIRCLE NO. 233 ON INQUIRY CARD—PAGE 17



Centralized Filtration Saves Coolant In Grinding Work

Providing centralized filtration of grinding coolant eliminated costly maintenance problems for Cogsdill Twist Drill Co., Detroit. System, which removes dangerous chips, abrasives and other solid contaminants, uses two-stage centrifugal pump to move coolant to clarifier and back. Two minutes backwashing to remove filtered matter replaces discarding coolant every 12 weeks and regular two week pump repairs or replacements.

CIRCLE NO. 234 ON INQUIRY CARD—PAGE 17



Safety Equipment

take advantage of
LUNKENHEIMER *Quality*



Fig. 1840PT
 150 lb. Air Nozzle

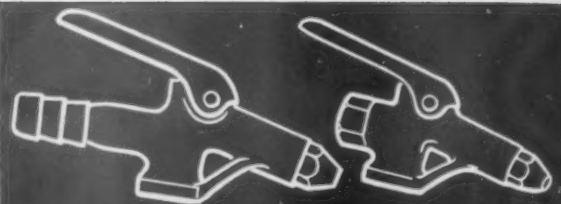
Make your expensive machinery last longer with Lunkenheimer Lubricating Devices. Cut the high cost of compressed air leaks with Lunkenheimer Air Nozzles and Cocks. Keep accurate check on your storage tanks and reservoirs with Lunkenheimer Liquid Gauges. All these carefully designed, carefully cast, carefully machined bronze accessories assure *longer* wear with *less* repair. The complete Lunkenheimer Line includes oil cups, grease cups, lubricators, cocks, nozzles, liquid gauges, and whistles. See your Lunkenheimer Distributor, or write for literature to The Lunkenheimer Co., Box 360X, Cincinnati 14, Ohio.

BRONZE • IRON • STEEL

LUNKENHEIMER®
 THE ONE *Great* NAME IN VALVES

L-253-12

For More Information Circle No. 473 on Inquiry Card—Page 17



AIR DEVICES



LUBRICATORS



OIL AND GREASE CUPS

Yes, Lunkenheimer produces the highest quality Engineering Devices, as well as the world's finest valves. And today — with the high cost of maintenance growing still higher—you **NEED** the extra margin of quality in design and workmanship that has made Lunkenheimer products world-famous.

LUNKENHEIMER



QUALITY

The Cost of a Lunkenheimer Valve Gets Smaller and Smaller and Smaller with Every Passing Year of Dependable Service.

Disposable Work Caps To Save \$2000 Annually

DuPont expects to save about \$2000 annually through use of work caps made of heavy Kraft paper which has been treated with neoprene synthetic rubber. Previously reusable cloth caps were used and they soiled rapidly from dripping chemicals. About 29% suffered from damage to the cardboard visor after laundering and they were discarded. The cheaper paper caps stay clean just as long, are lighter in weight, and can economically be discarded when dirty.

CIRCLE NO. 235 ON INQUIRY CARD—PAGE 17



Free Glove Policy Reduces Hand Injuries By 70%

A free work glove policy for employees of John J. Nesbitt, Inc., Philadelphia, Pa., has reduced cuts and other hand injuries an estimated 70%. The plant has found that a twisted loop pile fabric glove offers the firmest grip on oily surfaces and has excellent resistance to the cutting action of sharp-edged materials. Under the program set up, it is easy for the men to wear gloves at all times and turn in badly worn gloves for a fresh pair.

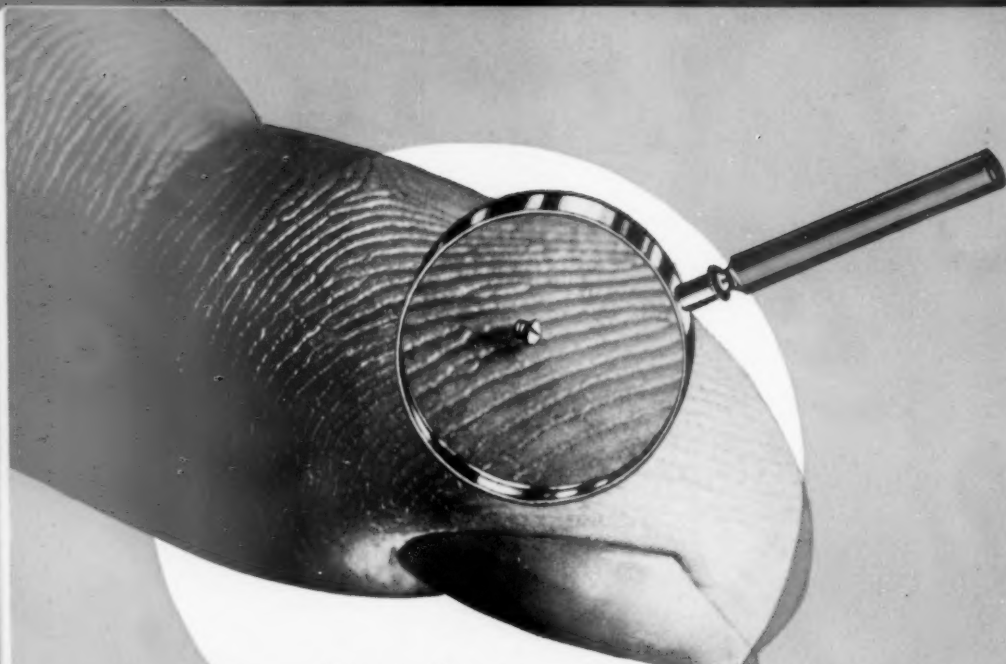
CIRCLE NO. 236 ON INQUIRY CARD—PAGE 17

Ear Plugs End Plant Noise Yet Permit Normal Talk

Employees in Solar Aircraft Company's Des Moines plant no longer are bothered by the necessary high noise level caused by various operations. Scientifically designed rubber plugs have been issued which reduce the noise volume of fabricating stainless steel, punch presses, drop-hammers, saws, etc. The plugs, however, allow the wearer to hear normal speech.

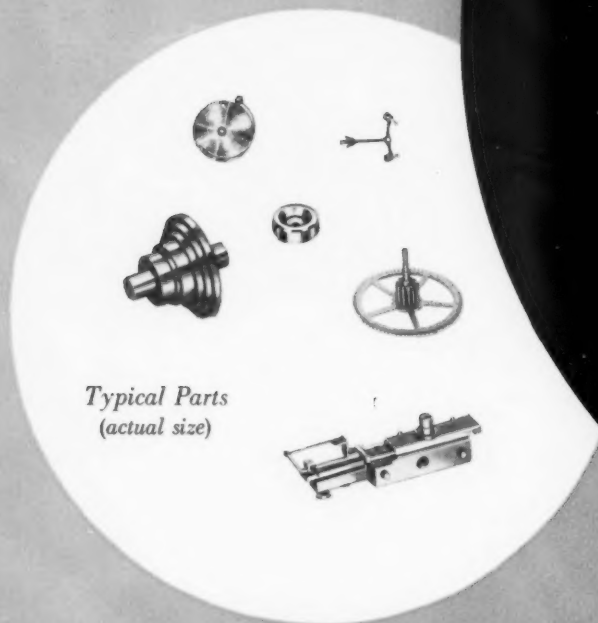
CIRCLE NO. 237 ON INQUIRY CARD—PAGE 17



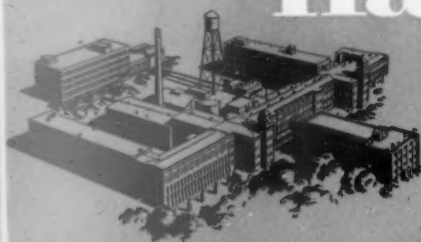


Stainless Steel screw; .022" long; 200 threads per inch; slotted head .036" in diameter.

this is precision



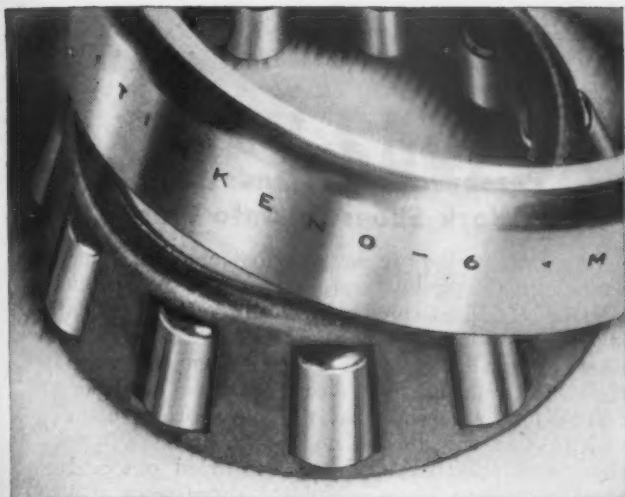
*Typical Parts
(actual size)*



Hamilton Watch COMPANY

Allied Products Division

948 WHEATLAND AVE., LANCASTER, PA.



* THE NUMBER OF THIS BEARING is 5BC-6 (you see the second part of the number on the bearing cup above). That tells you it's a tapered roller bearing of a certain size. But to a top P.A. the number spells bearing extras—in quality and service—when the "Timken" trade-mark is stamped beside it.



WE IMITATE maximum service loads by running bearings on our new fatigue test machine. It determines the effect of spindle deflection on bearing life and tests seals and lubricants. It's a small part of a big research program that helps make Timken bearings tops in quality.

WHAT CAN YOU SPELL WITH NUMBERS?



HERE'S ONE WAY WE CHECK the accuracy of our machine and gage parts—we project them on a screen graduated to minute dimensions. It helps keep bearing dimensions uniform—today, next week, next year. Quality and service like this make Timken bearings your number 1 value. And Timken bearings make any product more saleable because customers know them as a sure sign of quality. So when you specify a bearing number, always specify "Timken" too. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

Quality, service and public acceptance make **TIMKEN** number 1 for **VALUE**

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION

Safety Equipment



Preservative Extends Life Of Work Shoes In Auto Plant

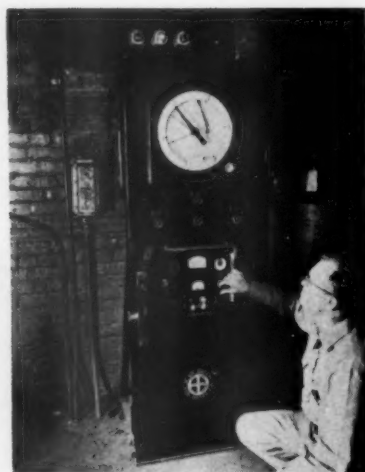
Shoes of workers in several divisions of a large automobile company were treated with a new silicone leather preservative. Treated shoes showed no oil penetration after 6 weeks, as compared to ordinary shoes which were saturated with hydraulic oils and kerosene after 2 weeks. Seams and stitching that normally broke open in 3 to 4 weeks showed no deterioration. Where shoes and soles exposed to heat dried out and cracked in 4 to 5 weeks, treated shoes were still pliable after 6 weeks.

CIRCLE NO. 238 ON INQUIRY CARD—PAGE 17

Indicator "Polices" Atmosphere, Prevents Explosion Hazard

A special Exogas (nitrogen) atmosphere is maintained by Westinghouse Electric Corp. in impregnating tanks where high-voltage stator coils are processed with protective asphalt-insulation or Thermalastic-insulation that fills air spaces and guards the coils against ionization. Oxygen would create an extreme explosive hazard. An oxygen indicator prevents this by "reading" atmosphere samples and warning with lights and "howler" when oxygen is present.

CIRCLE NO. 239 ON INQUIRY CARD—PAGE 17



Work Shirts Outlast Ordinary Kind By Nineteen Weeks

Both shirts pictured were worn by workers handling aluminum chloride and perchlorethylene in one of the nation's chemical plants. After one week's washing, the ordinary shirt was a total loss. A synthetic fabric, inherently resistant to acids and caustics, provides greater life without the addition of a chemical process in its manufacture. At the same time, ordinary washing methods will readily remove grease, oil and wax without injuring, seriously, the fabric.

CIRCLE NO. 240 ON INQUIRY CARD—PAGE 17

THEY SAVED

4¢

**out of
EVERY NICKEL!**

80% saving on lubrication costs

by just letting Pure Oil help them **SIMPLIFY AND SAVE!**

HERE'S HOW YOU CAN SAVE

1. Reduced inventory
2. Simplified inventory control
3. Reduced labor cost
4. Reduced errors in application
5. Simplified lubrication
6. Speeded-up purchasing

Be sure with Pure. Sales offices located in more than 500 cities in Pure's marketing area.

When a West Virginia coal mine found they were spending more than 5¢ per ton for lubrication, and loss of tonnage through breakdown was even more, they called in Pure Oil.

Within six weeks Pure Oil engineers had cut the cost down to 1¢ per ton (a savings of 80%). How? By selecting lubricants better suited to protect the machinery and, by setting up a lubrication program based upon a survey. Reducing the number of lubricants from seven to four resulted in smaller inventory and less waste. An unusual case, to be sure. Yet sizable savings have been accomplished in all types of mines, mills and factories by similar Pure Oil methods.

Send for this *free* booklet which tells you how you can *Simplify and Save* on lubrication, too!

IT STARTS HERE



PURE OIL INDUSTRIAL LUBRICANTS

FREE BOOKLET

The Pure Oil Company, Industrial Sales Dept. P-45
35 E. Wacker Drive, Chicago 1, Illinois
Please send me your free booklet on how to "Simplify and Save"

NAME _____
POSITION _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

New Products Ideas



For this special issue, the New Products and Ideas Section is devoted to additional cost-saving case histories. More information on any item here can be obtained by circling its number on the Inquiry Card facing page 17.

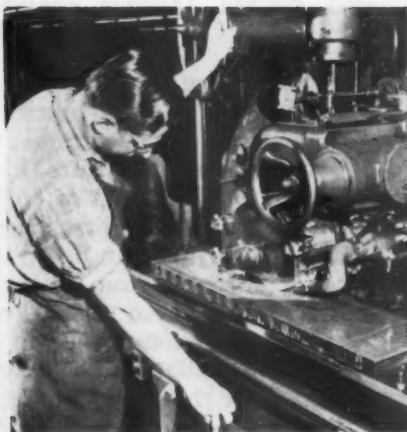
New Technique for Packaging Circuit Breakers Saves \$7000

Trumbull Components Dept., General Electric Co., Plainville, Conn., has found ways to reduce packaging costs and at the same time increase product protection. Previously circuit breakers had been packaged in corrugated boxes, using



several corrugated scored sheets as spacers in each carton. These corrugated sheets are now replaced by a specially designed slit-scored double-faced honeycomb packing piece to effect savings of \$7000 a year in wrapping costs.

Circle No. 241 on Inquiry Card—Page 17
202



New Grinding Wheels Double Production

Grinding hardened, high-speed textile blades is a difficult job due to the thin stock, according to a Massachusetts manufacturer. Since using a new make and type, however, the company has doubled its production. Their free and cool cutting has eliminated much spoilage due to warping and burning of the thin stock. In addition, they give closer tolerances and smoother finishes.

Circle No. 242 on Inquiry Card—Page 17

Long-Life Metal-Ceramic Tubes Cut Replacements

Thermocouple protection tubes made of a metal-ceramic combination far outlast all other types in giving good service in molten brass pyrometry in one of the nation's plants. In some instances, the tubes have survived as many as 240 dips



in the molten metal as compared to the 15 dips of previous thermocouples considered to give good service. It has eliminated the necessity of a man standing by to make frequent temperature checks since the long-life tubes permit use of automatic controls.

Circle No. 243 on Inquiry Card—Page 17

PURCHASING

The A. O. Smith

Heavy-Duty A. C. Welder

6000 hours longer life

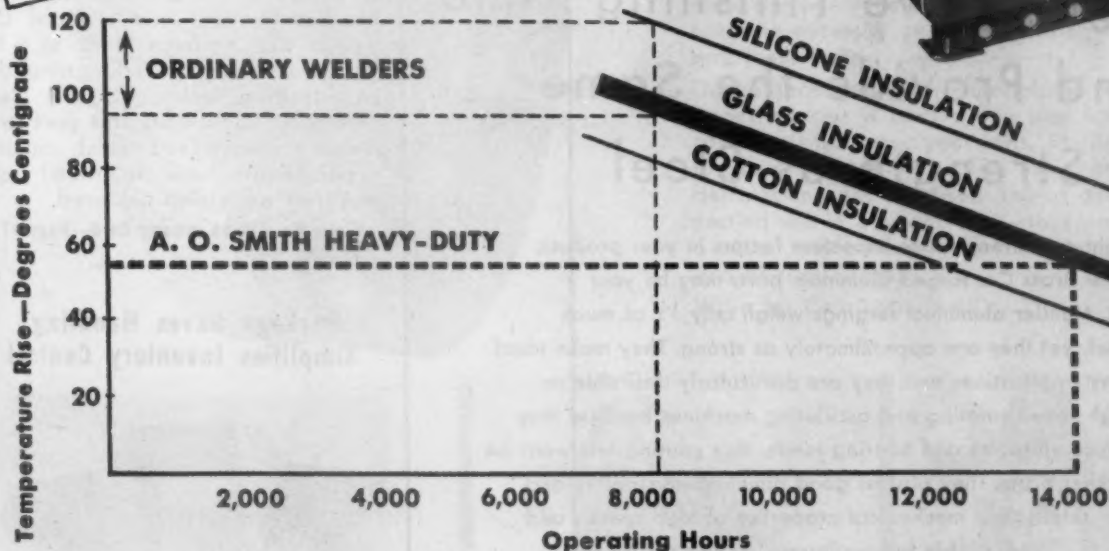
than any other A. C. welder

Available in 300-, 400-, and 500-Amp. models.



PROOF

LIFE EXPECTANCY CHART



Temperature Rise Determines Machine Life

According to the Insulation and Aging versus Temperature Curves, as published by the A.I.E.E. . . . *the cooler a welding machine operates, the longer its production life.*

The A. O. Smith Heavy-Duty is the *only* A. C. welder on the market with enough copper and cooling capacity to operate without exceeding a 55° C. temperature rise—as compared to the 90° C. rise allowed by N.E.M.A. for glass-insulated welders.

This means: This welder will give you top production efficiency almost twice

as long as any other A. C. welder on the market today.

Built for those who want the best in welding, the Heavy-Duty has a full 75 open circuit volts, high-velocity down-draft ventilation, all-weather case, 12½ KVA power factor correction and stepless current control.

For additional information on welding machines, electrodes and accessories, see your local A. O. Smith distributor or write to A. O. Smith Corporation, Welding Products Division, Milwaukee 1, Wisconsin.



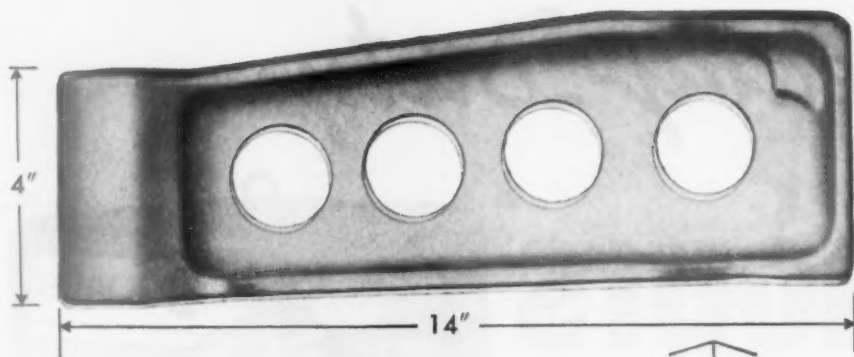
A.O. Smith

CORPORATION

WELDING PRODUCTS DIVISION

Dept. P-554, Milwaukee 1, Wisconsin
INTERNATIONAL DIVISION: MILWAUKEE 1

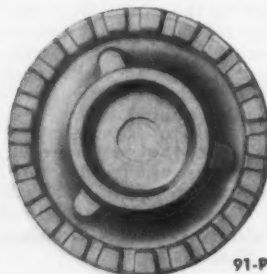
Made by welders . . . for welders



From Jet Bomber Parts to Gas Range Burners **MUELLER BRASS CO.**

Aluminum Forgings Save Weight, Save Finishing Time and Provide the Same Strength as Steel

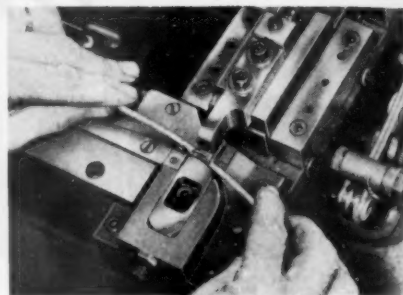
If weight and strength are important factors in your product, then Mueller Brass Co. forged aluminum parts may be your best bet. Mueller aluminum forgings weigh only $\frac{1}{3}$ as much as steel, yet they are approximately as strong. They make ideal parts for many applications and they are particularly desirable as parts for high speed rotating and oscillating machines because they reduce vibration and bearing loads, thus causing less wear on other parts. They possess good dimensional stability and retain their mechanical properties at high speeds and reasonable temperatures. The smooth, bright surfaces save machining time and eliminate costly finishing. Mueller Brass Co. can forge aluminum parts to your specifications in any practical size and shape from any of the standard or special alloys. Write us today for complete information.



MUELLER BRASS CO.
PORT HURON 21, MICHIGAN

For More Information Circle No. 478 on Inquiry Card—Page 17

Automatic Banding of Electric Wires Speeds Production



Joints in electric wires can be made as fast as the operator can pick up and position the wire with a high speed banding machine. The machine uses strip stock to form a tight band around each joint. It efficiently joins cords up to three wires and will join one wire to two wires. Bands can be numbered to identify motor, generator and telephone leads.

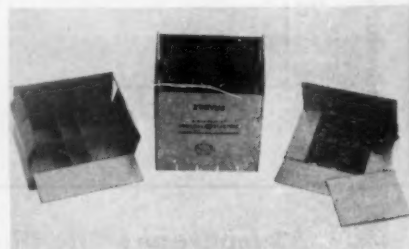
Circle No. 244 on Inquiry Card—Page 17

Change to Steel Casting Reduces Cost by 42%

A leading equipment manufacturer cut the cost of a snow plow bracket by 42% and reduced the weight 45% or from 11 lb. to 6 lb. This was done by redesigning the part from a weldment to a steel casting. By producing this part as a foundry engineered steel casting dependability and improved appearance were also achieved.

Circle No. 245 on Inquiry Card—Page 17

Package Saves Handling, Simplifies Inventory Control



Big savings in handling and packaging time in shipping transformers and fluorescent light ballasts has been effected by General Electric at its Fort Wayne plant. A new one piece shipping box featuring flaps that are die cut to form a multicell box is used. It makes it unnecessary to stock extra partitions and insert them into the box to secure the contents. The one-piece design also simplifies inventory control.

Circle No. 246 on Inquiry Card—Page 17

balanced

design



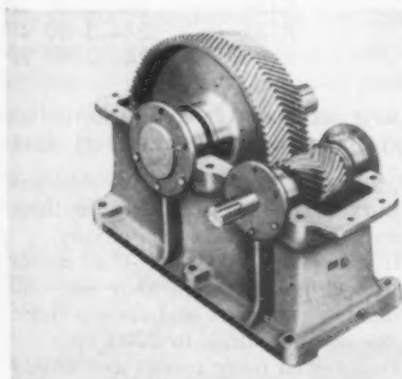
BALANCED DESIGN . . . adds to the life of Philadelphia Herringbone Gears and Speed Reducers. In addition to the Sykes continuous tooth, Philadelphia also manufactures Staggered or Separated tooth gears of the Herringbone type in sizes up to 150 inches diameter. For heavy duty industrial drives, the Herringbone Gear provides maximum efficiency and economy.

EFFICIENT, because overlapping tooth design provides smooth, quiet power transmission with almost no power loss between gears.

ECONOMICAL, because the Herringbone tooth design has greater inherent strength, thus permitting the use of gears of less dimensions than might otherwise be employed. Also, the balanced axial thrust forces eliminate the necessity of heavy bearings to absorb these forces.

The balanced design of Philadelphia Herringbone Reducers is carried one step further in completely balanced gear units. Philadelphia reducers, illustrated below, show how the Herringbone and opposed helical gears are nestled within one another,—thus providing a wide, stable housing with balanced gear and bearing loads.

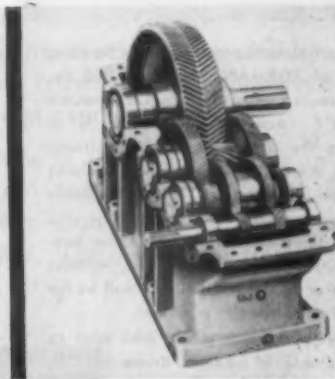
Write for Catalogue H-49.



Single Reduction Type



Double Reduction Type



Triple Reduction Type

PHILADELPHIA GEAR WORKS, INC.

ERIE AVE. AND G ST., PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.



Industrial Gears & Speed Reducers

Limit Torque Valve Controls

OVER
60,000 lbs.
OF FAMOUS

ADAMANT
FIRE BRICK CEMENT

USED IN BUILDING
THESE 3 LARGE
INCINERATORS IN
CANADA . . .



. . . impartial tests prove that the bonding strength of ADAMANT rises from 800 lbs. p.s.i. at room temperature to 1270 pounds at 2600°F.—Actually, ADAMANT is as strong as the brick it bonds. Its strong, gas-tight, metal-tight joints will not shake loose from vibration . . . effectively resist the abrasive action of dust-laden air . . . maintain their bond throughout the temperature range . . . and set without shrinking or cracking. Write or call us for literature and dealer's name.

ADAMANT - ready - mixed and easy to use—available in air-tight drums of 100, 250, and 500 lbs. capacity.

BOTFIELD

REFRACATORIES CO.

789 S. Swanson Street, Philadelphia 47, Pa.
In Canada
Canadian Botfield Refractories Co., Ltd.
171 Eastern Avenue, Toronto

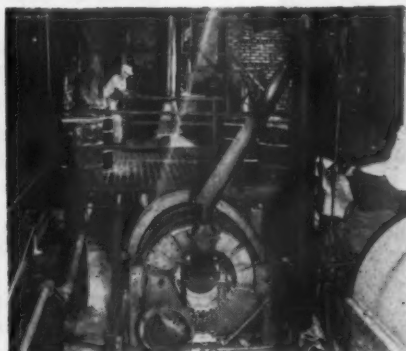
For More Information Circle No. 480 on
Inquiry Card—Page 17

45-Ton Diesel Replaces Steam Engines, Saves \$600 Monthly

Operating costs were reduced \$600 per month when Crossett Chemical Co., Crossett, Ark., replaced two 50-ton steam locomotives with a 45-ton diesel. Used for miscellaneous switching jobs, the diesel also has saved labor costs in that the one engine does the work of the two steamers. Its increased speed has tended to eliminate much of the overtime work. Normal load-weight handled by the diesel is from 600,000 to 700,000.

Circle No. 247 on Inquiry Card—Page 17

Dust Collector Salvages Good Material, Keeps Plant Clean



Sherwin-Williams Co., Chicago, Ill., finds that a dust collector ventilating its beta-naphthol chip cooler salvages 500 lbs. of dust from every 25,000 lbs. of material passing through the cooler. This good material recovered by the dust collector is put back into the batch and used, instead of being dispersed into the atmosphere. In addition to savings effected on material recovered, the dust collector keeps the atmosphere around the plant clean.

Circle No. 248 on Inquiry Card—Page 17

Continuous-Cast Bronze Less Costly for Precision Bearings

Highest quality precision bearings for surveyor's transits are made with continuous-cast bronze by W. & L. E. Gurley, Troy, N. Y. Speed and accuracy in machining are possible through absence of internally-trapped abrasives. Also, rejects are at a minimum because of no porosity, no blowholes and no internal flaws. Physical properties of the alloy is up 35% to 100% over the same alloy cast in other methods giving more service of equipment to the customers.

Circle No. 249 on Inquiry Card—Page 17

CHECK YOUR MOTOR NEEDS . . .

New G-E **TRI 55 CLAD**

*motors are now available
in these ratings!*

TRI/CLAD '55' DRIPPROOF MOTORS

HP	Frame	Ratings
1/2	K182	244-3-60 8P
3/4	K182	244-3-60 6P
3/4	K184	244-3-60 8P
1	K182	244-3-60 4P
1	K182	208-3-60 4P
1	K182	550-3-60 4P
1	K184	244-3-60 6P
1 1/2	K182	244-3-60 2P
1 1/2	K184	244-3-60 4P
1 1/2	K184	208-3-60 4P
1 1/2	K184	550-3-60 4P
1 1/2	K184	244-3-60 6P
2	K182	244-3-60 2P
2	K184	244-3-60 4P
2	K184	208-3-60 4P
2	K184	550-3-60 4P
3	K184	244-3-60 2P

TRI/CLAD '55' ENCLOSED MOTORS

HP	Frame	Ratings
3/4	K182	244-3-60 6P
3/4	K184	244-3-60 8P
1	K182	244-3-60 4P
1	K184	244-3-60 6P
1 1/2	K182	244-3-60 2P
1 1/2	K184	244-3-60 4P
1 1/2	K184	244-3-60 6P
2	K184	244-3-60 2P
2	K184	244-3-60 4P
3	K184	244-3-60 2P

SAMPLE MOTORS ARE AVAILABLE IN THE
NEXT DIAMETER—FRAME SIZES K213, K215.

In addition to the above standard motors, many special motors in these ratings are also ready for delivery.

If you wish the G-E Tri-Clad motor in the original design, they are still available . . . in sizes and ratings listed above and in ratings to 2000 hp.

To get even more recent availability information on new Tri-Clad '55' standard and special motors, contact your nearest G.E. Apparatus Sales Office or G.E. motor supplier. General Electric Co., Schenectady 5, N. Y. 648-17

GENERAL ELECTRIC

For More Information Circle No. 481 on
Inquiry Card—Page 17

PURCHASING

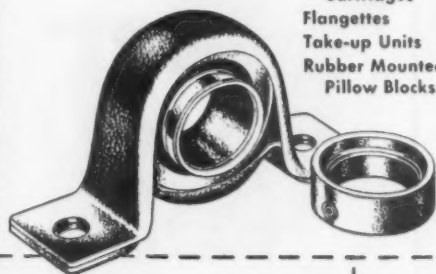
*preference
points
on power
transmission
units*

Wide Range of Types and Sizes

MANY TYPES

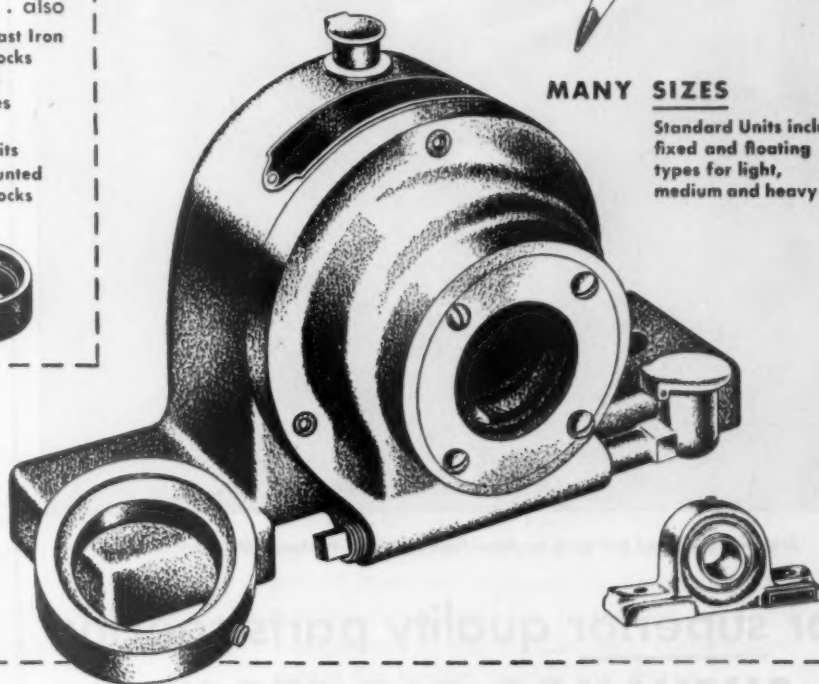
New Pressed Steel Pillow Block . . . also

Standard Cast Iron
Pillow Blocks
Cast Flange
Cartridges
Flangettes
Take-up Units
Rubber Mounted
Pillow Blocks



MANY SIZES

Standard Units including
fixed and floating
types for light,
medium and heavy duty.



If you are considering the application of power transmission units on products or plant equipment, you have an extremely wide selection of standard types and sizes in the Fafnir line. Chances are you can get Fafnir units to meet your requirements exactly . . . cost-wise as well as design-wise . . . and all of them incorporate precision bearings made to uniformly high quality standards.

Fafnir Ball Bearing Power Transmission Units feature the famous Fafnir Wide Inner Ring Bearing with Self-

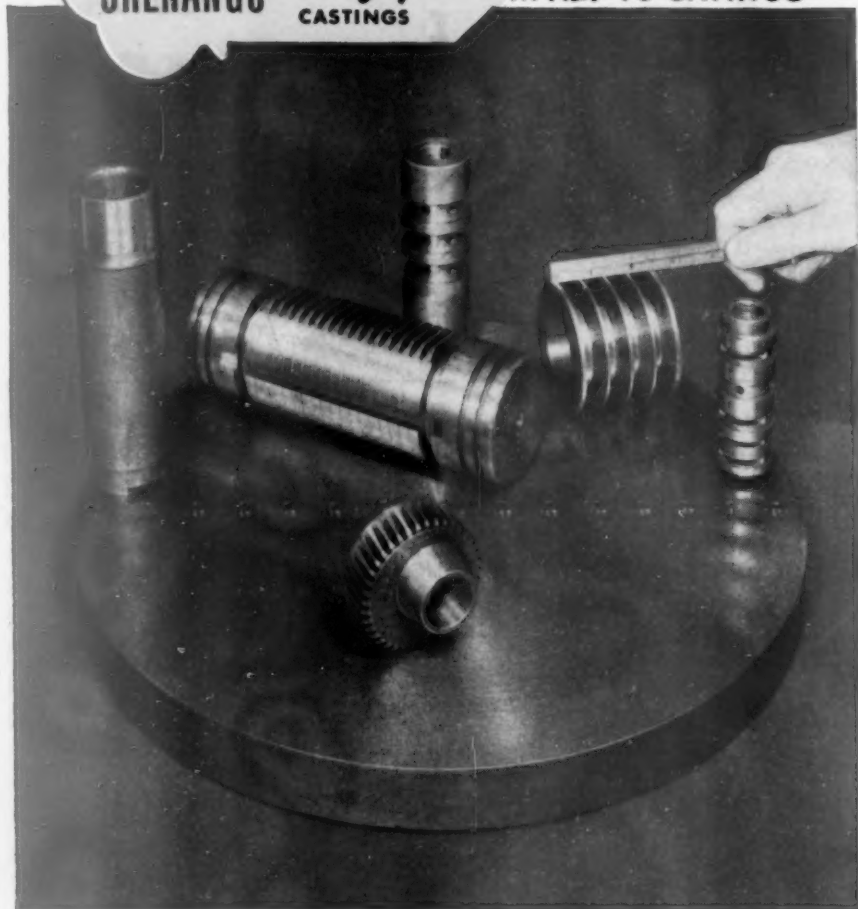
Locking Collar . . . easiest of all to install. Unique shaft-locking action eliminates the need of set screws, adapters or lock nuts . . . and frictionless seals positively retain lubricant, repel contaminants.

The breadth and scope of the Fafnir Line is an important factor in the growing preference for Fafnir Ball Bearing Power Transmission Units. Get complete details from your distributor. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA



SHENANGO*Centrifugal*
CASTINGS**... KEY TO SAVINGS**

Examples of finished tool parts machined from Shenango Meehanite Metal bar stock.

For superior quality parts specify **SHENANGO BAR STOCK!**

THESE complex and varied machine tool parts were made from Shenango Meehanite Metal bar stock, recognized for close grain, pressure tightness, uniform hardness and exceptional wear resistance.

In addition, the uniformity of Meehanite Metal permits machining at increased speeds. It takes a fine, smooth finish in any cutting, honing, or grinding operation. Can be heat-treated too. When you specify Meehanite Metal bar stock you receive longer wear, minimum

machining loss and freedom from defects.

These and other outstanding Shenango features add up to maximum versatility, minimum rejection, and the cost-cutting solution to many design and maintenance problems.

Write today for Bulletin 152.
Address . . .

SHENANGO-PENN MOLD COMPANY

Centrifugal Castings Division
Dover, Ohio

Executive Offices: Pittsburgh, Pa.

SHENANGO

COPPER, TIN, LEAD, ZINC BRONZES • MONEL METAL
ALUMINUM AND MANGANESE BRONZES • NI-RESIST • MEEHANITE METAL

For More Information Circle No. 484 on Inquiry Card—Page 17

Baskets Hold Up 10 Times Under Intense Heat

The Solar Aircraft Co. has increased the life of baskets used for annealing jet burner plates more than ten-fold. Solar now uses a basket incorporating a "serpentine" design with rolled sheet on two sides and rod on others to carry burner plates through a gas furnace for continuous annealing at 2150F. Previous style baskets were rendered useless by the intense heat after a relatively short time.

Circle No. 250 on Inquiry Card—Page 17

Ultrasonic Cleaner Handles Jet Fuel Parts Faster, Better



Jet engine fuel control parts made by Holley Carburetor Co., Detroit, are cleaned faster and more efficiently with an ultrasonic generator than was previously possible with hand scrubbing with nylon brushes and flushing with a solvent. Used 16 hours a day, six days a week, a single operator rapidly subjects the precision parts to intense high-frequency sound waves produced by a quartz crystal transducer. Placed in a solvent and cleaned by this method, the parts are removed of virtually all dirt and extraneous matter.

Circle No. 251 on Inquiry Card—Page 17

Power Company Saves Thousands Using Chemical Weed Killer

Chemical weed killer slashes maintenance costs for Rockland Light & Power of Middletown, N. Y. During first six year cycle, chemical control of 1856 acres of right-of-way will cost \$191,000 whereas hand cutting of brush would cost \$230,000. During second six year cycle, savings from spraying weed killer should increase to \$137,000 because chemicals inhibit new brush growth.

Circle No. 252 on Inquiry Card—Page 17

ANSUL

PROVIDES THE MOST COMPLETE LINE OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT



HAND PORTABLES



MODEL 4-C



MODEL 20-B



MODEL 30-B

NEW WHEELED PORTABLES



MODEL 150-B



MODEL 350-B

In Ansul's complete line of Fire Extinguishing Equipment there is a model of just the right size to adequately protect nearly every type and area of class B and C fire hazards in, or around, your plant. And, more important, even the largest capacity wheeled portable and stationary equipment by Ansul, is designed for quick, easy, one-man operation.

Ansul Fire Extinguishers are designed for maximum effectiveness even when used by inexperienced employees. They are easy to operate and can be quickly recharged "on-the-spot." No special tools are required for recharging, inspection or maintenance. In addition, all Ansul Equipment is water-tight and corrosion-resistant for longer, trouble-free service.

TRUCK MOUNTS, TRAILERS AND FIRE TRUCKS



MODEL S-2000-B



PIPED SYSTEM



MODEL J1-340

STATIONARY EXTINGUISHERS AND PIPED SYSTEMS



ANSUL
Chemical Company

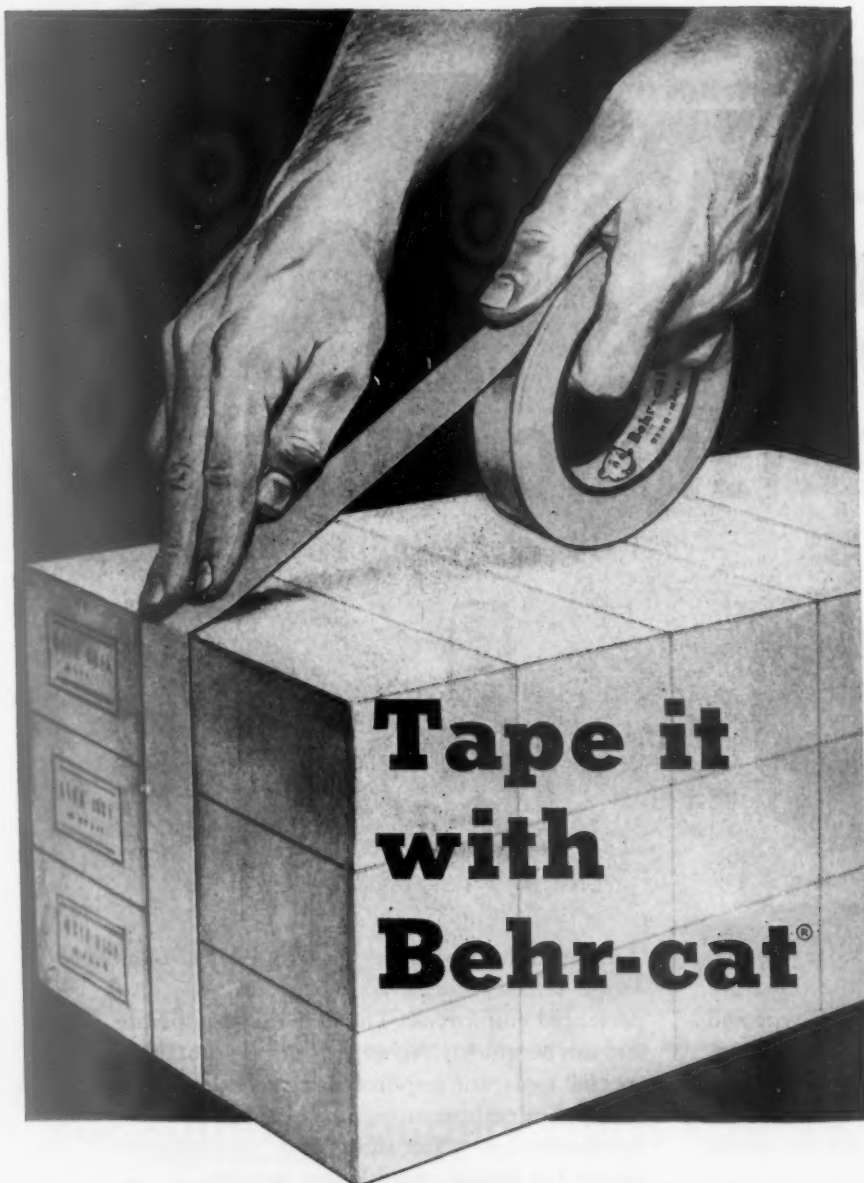
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES

For More Information Circle No. 486 on Inquiry Card—Page 17

MAY, 1954

213



**Tape it
with
Behr-cat®**

...to speed packing and shipping



Fast application makes strong, filament-reinforced, pressure-sensitive BEHR-CAT Strapping Tape the modern, cost-cutting method of wrapping, packing and bundling. Use it and save all over the plant.

Behr-Manning Corp., Troy, N. Y.

In Canada: Behr-Manning (Canada) Ltd., Brantford.
For Export: Norton Behr-Manning Overseas Inc.,
New Rochelle, N. Y., U. S. A.



BEHR-MANNING

division of NORTON Company

▲ COATED ABRASIVES
▲ SHARPENING STONES
▲ PRESSURE-SENSITIVE TAPES

For More Information Circle No. 487 on Inquiry Card—Page 17

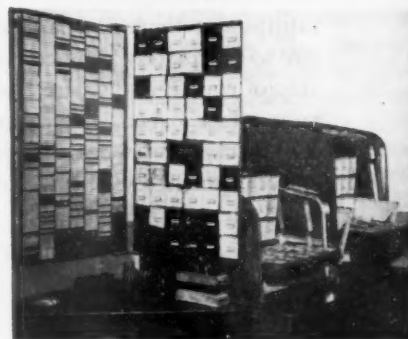
Hydraulic Fluid Lessens Fire Danger in Lines



A break several months ago in the hydraulic line of the mechanism which handled white-hot billets in the Spang-Chalfant Division of the National Supply Co. caused a fire which burned out electrical controls and interrupted production of seamless tubing for six hours. Recently, after a similar break, there was no fire and negligible loss. Between the two events, a fire resistant hydraulic fluid had been added.

Circle No. 253 on Inquiry Card—Page 17

Tool Crib Control System Pays for Itself in Savings



A tool crib control system paid for itself in savings from reduced tool purchases in the first few months after installation at the plant of the Pfaudler Co., Elyria, Ohio. At the start of operating the system 3757 expendable tools such as drills, taps and reamers having a value of \$5375 were turned into the crib. In addition, more permanent types of tools such as chucks and sleeves, valued at over \$3000 were recovered.

Circle No. 254 on Inquiry Card—Page 17

57% Faster Taper Boring

Better methods permit 57% faster taper boring of horizontal milling machine spindles at the George Gorton Machine Co. of Racine, Wis.

(Please turn to page 216)

Welder users: **AVOID WATER-SHORTAGE SHUTDOWNS!**



TEMPERATURE-CONTROLLED IGNITRONS

***Cut* cooling-water needs 95%!
Save up to 300,000 gallons daily!**

ONE GALLON DOES THE WORK OF 20! That's the phenomenal water saving with G-E Temperature-controlled Ignitrons! In case your wells run low this summer—if the municipal water supply is cut due to emergency restrictions—output from your welders will stay high, because these new ignitrons need only 5% or less of the cooling water formerly required.

ECONOMICAL! G-E Temperature-controlled Ignitrons cut operating expense! If you are a large user of resistance welders, your plant will save up to 300,000 gallons of water in an 8-hour day. That is \$65 at national-average water cost.

WON'T OVERHEAT, OVERLOAD! A big plus! Built into these new G-E ignitrons are automatic safeguards against overheating and overloading. Burnouts are banished, and tube replacements cut 'way down.

NO DAMAGING "DRIP"! The surfaces of the new ignitrons are free from moisture condensation. There is no drip to rust or damage the other panel components.

PHONE YOUR G-E TUBE DISTRIBUTOR! Ask him . . . today . . . for all the facts about G-E Temperature-controlled Ignitrons—most sensational improvement in welding tubes in over 20 years! *Tube Department, General Electric Company, Schenectady 5, New York.*

NEW GL-6347. Size C. Will replace GL-5552/FG-235-A.

Also available are:

NEW GL-6346. Size B. Will replace GL-5551/FG-271.

NEW GL-6348. Size D. Will replace GL-5553/FG-258-A.



GENERAL  ELECTRIC

161-183

INTER-OFFICE MEMORANDUM
TO: FRED JOHNSON - Engineering

Fred—
Will you check with Ahlberg?
Understand they make just
the bearing for our job #10343
— good bearings, too!
Jim

AHLBERG

BALL BEARINGS

over 1,000 types and sizes

Ahlberg Bearing Company, 3025 W. 47th St., Chicago 32, Ill.

SALES ENGINEERS IN PRINCIPAL CITIES

For More Information Circle No. 489 on Inquiry Card—Page 17



EXPERIENCE vs. EXPERIMENT

WHEN YOU SELECT S.I.A. wipers, you do away with costly experimentation and "trial and error" methods. That's because every Institute member is an experienced specialist who will analyze your problems and recommend the wipers best suited to your individual needs.

But that's not the only saving. Because S.I.A. wipers come in an almost unlimited variety of textile fabrics, you can choose the particular grade that's most efficient for the given purpose. Furthermore, although they adhere rigidly to minimum requirements of dimensions, weight, and absorbency, there is a flexibility that permits their adaptation to the individual job. And, of course, all S.I.A. wipers are sterile as well as clean.

Get in touch with your nearest Institute member today and find out how he can help you CUT YOUR WIPING COSTS!

DEMAND THIS LABEL!

It's your assurance of clean, sterile, absorbent wipers packed to rigid specifications.



The Sanitary Institute of America has a membership of over one hundred leading industrial wiping cloth processors in twenty-seven of the United States. This advertisement is sponsored by the members listed here.

ATLANTA, GA.:

Rittenbaum Bros., 691-701 Houston St., N.E.

BROOKLYN, N. Y.:

Delia Waste Products Corp.,
1625 Dean St. (13)
Horton Wiping Materials Co.,
96 N. 10th St. (11)

CHICAGO, ILL.

American Sanitary Rag Co.,
336 W. 37th St. (9)
Chicago Sanitary Rag Co.,
2137 S. Loomis St. (8)

DETROIT, MICH.:

Ace Wiping Cloth Co.,
7355 Bryden Ave. (10)
Consumers Paper Co.,
5170 Vermont Ave. (8)

PITTSBURGH, PA.:

Armstrong Sanitary Wipers Co.,
1233 Spring Garden Ave., N.S. (12)
Scheinman-Neaman Co.,
1024 Vickroy St. (19)

ROMEO, MICH.:

The W. Rumsey Co.

For prices and samples, write any member. For Institute specifications, write any member or The Sanitary Institute of America, 105 W. Monroe St., Chicago 3, Ill.

THE SANITARY INSTITUTE of AMERICA

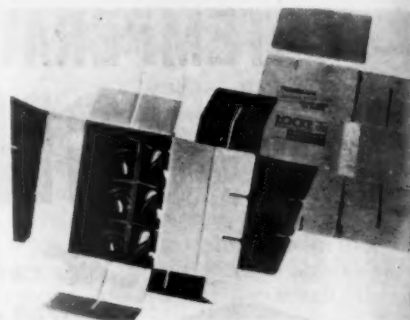
For More Information Circle No. 490 on Inquiry Card—Page 17

(Continued from page 214)

Starting with a 1 3/8" hole in the forging, a No. 50 NS inside taper is machined. A finished arbor (of the type and size that will be used in the spindle) is used as a template for the copying attachment used to guide the cutting tool.

Circle No. 255 on Inquiry Card—Page 17

12 Units Packed Better, More Cheaply, Than 8



The adoption of a novel one-piece corrugated paper container brought about unusual savings for the Locke Dept., General Electric Co., Baltimore, Md., manufacturing porcelain insulators. The new shipping box provides an effective 12-cell partition. Only one interior packing piece is necessary. The former method of packing required five separate packing pieces and only 8 insulators could be shipped at a time.

Circle No. 256 on Inquiry Card—Page 17

Natural Rubber Belts Failed in 8 Months, Neoprene Doubles Use



Elevator belts carrying sand at 225 to 250F from the discharge end of an oil-fired rotary kiln dryer to a storage silo of South River Sand Co., Old Bridge, N. J., failed after 7 or 8 months. Replaced with neoprene belts, operations around the clock failed to destroy usage of the belt until nearly 16 months later. Actually, failure resulted from embrittlement of the carcass rather than the neoprene cover.

Circle No. 257 on Inquiry Card—Page 17

For More Information Circle No. 491
on Inquiry Card—Page 17→



New Westinghouse Ignitron Cuts Welding Costs Three Ways

1. Saves up to 90% of cooling water
2. Gives added protection against burnouts
3. No increased tube costs

You can save up to *one million gallons* of cooling water per welder per year with new Westinghouse Thermostatic Ignitrons. Tubes are equipped with a new thermostat mount which indicates temperature of the inner vacuum envelope. When a standard recommended thermostat is attached, water flow can be automatically controlled.

These new Westinghouse Ignitrons automatically protect tubes and equipment against burnout due to water failure. They are completely interchangeable with standard Ignitrons and can be used with or without the detachable thermostat.

Best of all, Westinghouse offers these new rectifiers at no increased cost. Prices are the same as those for comparable Ignitrons without thermostat mounts.

Ask your Westinghouse Electronic Tube Distributor about them or write to Westinghouse, Dept. E-1054, at the address below for full information.

YOU CAN BE SURE...IF IT'S
Westinghouse

ET-95055

RELIATRON® TUBES

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, N. Y.

For More Information Circle No. 492 on Inquiry Card—Page 17



GLOVES • MITTENS
HAND GUARDS
ARM PROTECTORS
LEGGINGS • SPATS • SHIN GUARDS
APRONS • COATS • PANTS

Safeguards furnished in your
required materials.



Steel-Grip
INDUSTRIAL
Safety Apparel

TRADE-MARK
To be sure
of the Genuine
Demand this Trade Mark

STEEL-GRIP OPEN END FINGER GUARDS

The Finger Guard demonstrates how close Industrial is to the safety needs of industry. Since Industrial introduced Steel-Grip open end Finger Guards, they have been used successfully in every type of American industry. Made in open and closed end styles, in a choice of materials. Ask for literature describing the various types. SIZES FOR MEN AND WOMEN. (U. S. Patents No. 2,351,906, No. 2,461,872.)



Write for
INDUSTRIAL'S
CATALOG
of Safety Apparel.
The Nation's Leader
in Industrial Safety.

INDUSTRIAL GLOVES COMPANY

A Corporation

3000 Garfield Street, Danville, Illinois

(In Canada: Safety Supply Co., Toronto)

DEMAND QUALITY

*if you want full safety in
your safety apparel buys*

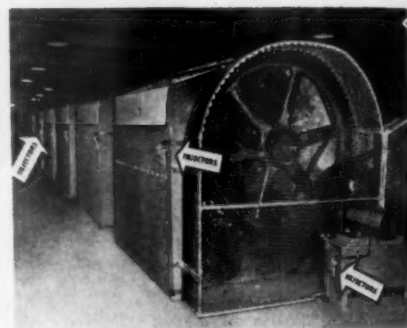
Quality alone can put maximum performance into a product... quality alone can put real safety into safety apparel. Steel-Grip Safety Apparel gives you quality of design, better protection, longer service... more for your money.

These facts, more than anything else, explain why for 43 years the nation's leading industrials have turned to Steel-Grip Industrial Safety Apparel.

These industrials have reason to know that the *appearance* of safety without the *fact* of safety can be worse than no protection at all.

You, too, should draw upon this rich capital of 43 years' experience in coping with your industrial risks and hazards. Insist on the genuine labeled Steel-Grip Industrial Safety Apparel from your industrial or safety supply jobber.

Lubrication Costs Cut 45%



Centralized lubrication for a variety of equipment in the preparation plant of the Hanna Coal Co., has saved \$20,000 per year in replacing bearing failures and maintenance. In addition, the company has saved 45% in lubrication costs plus the fact that fewer men are required to maintain the system. Less break-down time has also brought a considerable increase in production.

CIRCLE NO. 258 ON INQUIRY CARD—PAGE 17

Plastic Pipe Installed Much Faster, Costs Less



The Carolina Power and Light Company has initiated the use of butyrate plastic pipe for pumping corrosive well water at their Wilmington, N. C. generating plant. This pipe, which offers good corrosion resistance, was installed in less than half the time of metal pipe because of its light weight. Material costs are also lower. The lengths of plastic pipe were joined by slip-sleeve couplings and solvent cement which, in effect, provide welded joints.

CIRCLE NO. 259 ON INQUIRY CARD—PAGE 17

Bracket Cost Cut 30%

A maker of power equipment reduced the cost of a single roller track bracket by 30%. He substituted a cast steel bracket for the

(Please turn to page 224)

NOW SAVE 36%

on Installation Time
and Cost

with **IMPERIAL**
Hi-Duty®
TUBE FITTINGS

**Furnished in Brass,
Aluminum, Steel
and Stainless Steel**



SLEEVE SHEARS OFF AT GROOVE

**Just Push
Tube Into
Fitting
Without
Removing Nut**

The sleeve
on Hi-Duty
Fittings shears off
during assembly and
becomes permanently
attached to tube. Fitting
will make repeated tight
reconnections.

For Tubing 1/8" to 1" O.D.
Ask for Bulletin No. 3002

Average Time Required to Assemble Fittings

Type of Fitting	Average Time Each Joint	Joints per Hour
HI-DUTY	13.2 sec.	274
Regular Compression	20.8 sec.	173
Flare	45 sec.	80

Compared to COMPRESSION FITTINGS

Repeated, thorough tests under field conditions reveal that Imperial Hi-Duty Fittings can be assembled in an average time of 13.2 seconds . . . whereas regular compression type fittings take an average of 20.8 seconds. This is a 36% saving in time . . . and precious labor.

Compared to FLARED FITTINGS

Here the savings in time are even more striking since it takes 45 seconds on the average to install a flare fitting compared to 13.2 for Hi-Duty . . . a saving of 71% in time. A man can assemble better than 3 Hi-Duty Fittings in the time it takes to assemble 1 flare fitting.

Why is the HI-DUTY FITTING so much Easier and Quicker to Assemble?

Fitting furnished with integrated nut and sleeve

To get a tight joint, simply insert tube into fitting and tighten nut. No loose sleeve to drop . . . no flaring required. Makes repeated tight reconnections.

MAKES STRONGER JOINTS

Because sleeve is always in perfect alignment when joint is made and because its design minimizes deformation of tubing, Hi-Duty Fittings assure stronger joints that remain leakproof even under severe service. Tests show Hi-Duty joints will stand over 5 times as much vibration as joints made with ordinary compression or flare fittings.

See Your Industrial Supply House

THE IMPERIAL BRASS MANUFACTURING COMPANY

IMPERIAL

512 S. Racine St., Chicago 7, Ill.

In Canada: 334 Lauder Ave., Toronto, Ontario

Pioneers in Tube Fittings and Tube Working Tools



"FASTER PRODUCTION WITH JADE-LITES,"

thanks to the **LUSTRA MAN,**

[says The Philadelphia
Thermometer Company]



THIS REPORT from Mr. L. W. Scanlan, General Manager, may help you improve your own operations:

"The ordinary slimline and fluorescent tubes formerly used in our production department caused an annoying amount of glare. At the suggestion of our local Lustra Man we installed Lustra Jade-Lite Fluorescent Tubes and immediately found that both glare and eyestrain were eliminated...with the end result that production has been importantly speeded."

...

Like other plant men the country over, you'll find that your local Lustra Man can reduce glare and step up the "see-ability" required for top efficiency in precision work areas...with Lustra Jade-Lite Fluorescent Tubes.

More than that, your Lustra Man is thoroughly qualified to solve practically any individual lighting problem and give you added lighting effectiveness at less cost with the full quality line of Lustra Double Duty Lamps, Fluorescent Tubes and allied electrical products.

Write us for literature giving the whole Lustra story.
Lustra Corporation, Dept. V-5, 36 Washington St., B'klyn 1, N. Y.

Lustra

AMERICA'S DATED LAMPS.



DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLIGHTS AND FLOODLIGHTS,
RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

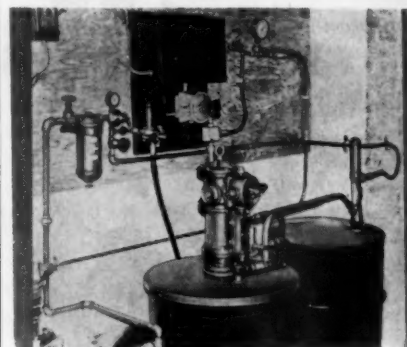
For More Information Circle No. 495 on Inquiry Card—Page 17

(Continued from page 222)

original weldment. In addition to the savings, adoption of the steel casting resulted in a more readily machined part and elimination of "creep" after machining, a condition caused in the weldment by internal stresses. Appearance was also improved.

Circle No. 260 on Inquiry Card—Page 17

Bearing Life Increased Lubricant Use Reduced



A New York carpet mill reduces maintenance and repair costs by use of a central automatic lubrication system serving 12 looms. Formerly, looms were lubricated manually with oil cans. Now looms are lubricated an average 20 times per hour automatically and messy dripping is eliminated. Additional savings include a 1500% increase in bearing life and an 87% reduction in lubricant consumption.

Circle No. 261 on Inquiry Card—Page 17

Steel Turbine Parts Production Up 500%



An abrasive belt and contact wheel operation has increased the production of steel turbine bucket-forgings by 500% for Lakeshore Industries, Inc., Cleveland. By speeding the finishing of the inside and outside of the forgings, the company has considerably boosted its output.

Circle No. 262 on Inquiry Card—Page 17

for your product or your plant

ENCLOSURE TYPES



SPLASHPROOF

Type XP-1, normal torque, $\frac{3}{4}$ -250 hp, and type XP-5, high torque, 3-50 hp. 50°C, single speed, ball bearing, rigid base, horizontal.

TOTALLY ENCLOSED NON-VENTILATED

Type TP-1, normal torque, $\frac{1}{4}$ -15 hp. 55°C, single speed, sleeve or ball bearings, rigid base, horizontal.

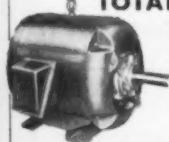


TOTALLY ENCLOSED FAN-COOLED

Steel Frame Construction

Type CP-1, normal torque, 1-250 hp; type CP-5, high torque, 3-75 hp. Standard.

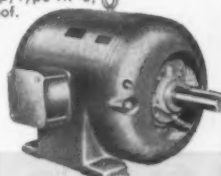
Type HP-1, normal torque, 1-250 hp; type HP-5, high torque, 3-75 hp. Explosion proof.



Cast Iron Frame Construction

Type EP-1, normal torque, 2-250 hp; type EP-5, high torque, 3-75 hp. Standard.

Type JP-1, normal torque, 2-250 hp; type JP-5, high torque, 3-75 hp. Explosion proof.



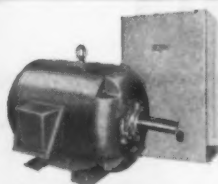
MULTISPEED MOTORS

Multispeed squirrel-cage motors are used where more than one running speed is required, but where close speed regulation is not required. They are built with the same electrical characteristics and the same types of enclosure as single speed motors.

CHARACTERISTICS	SPEEDS	APPLICATIONS
Constant Torque motors have the same torque ratings at each speed and the horsepower varies directly as the speed.	2, 3 or 4	Typical applications; stokers, conveyors, printing presses.
Variable Torque motors have torque ratings which are directly proportional to the speeds and consequently the horsepower varies as the square of the speed.	2, 3 or 4	Typical applications; fans, blowers, centrifugal pumps and similar applications.
Constant Horsepower motors have the same horsepower rating at each speed and the torque varies inversely with the speed.	2, 3 or 4	Typical applications; lathes, boring machines and other machine tools.

HERMETIC MOTORS

POLYPHASE			SINGLE-PHASE		
TYPE	RATINGS	APPLICATIONS	TYPES	RATINGS	APPLICATIONS
BP, Squirrel-cage	1½ to 10 hp 3 phase 60 cycle 208, 220 or 440 v.	Sealed refrigeration units, air conditioners, commercial refrigerators, etc.	RB-Split phase RK-Capacitor-start induction run RY-Capacitor-start and run	¼ hp 60 cycle 115 v. ¼ to ¾ hp 60 cycle 115 or 230 v. ½ to 5 hp 60 cycle 230 v.	Hermetically sealed refrigeration units, freezers, compressors, household refrigerators, etc.



INCREMENT TYPE MOTOR AND STARTER COMBINATION

A low-cost combination of a poly-phase squirrel-cage motor, wound with two parallel star circuits, and a magnetically operated two step increment type starter, which limits the inrush of current at starting.

JET PUMP MOTORS

Type RK—Single-phase, capacitor-start, open type, 40°C. with round frame, ball bearings, and NEMA face type back endplate for horizontal or vertical end mounting. Built to NEMA standard dimensions and performance, in ratings $\frac{1}{4}$ to 1 hp, 60 cycle 3600 rpm, 50 cycle 3000 rpm, 115/230 volts.

FAN DUTY MOTORS

Type TM—Shaded-pole, totally enclosed non-ventilated, no temperature rating, for shaft mounted propeller fans which draw air over the motor. 1/125, 1/80, 1/40, 1/30 and 1/20 hp; sleeve bearings, round frame or with rigid or resilient base. 3 speed reactor controllers can be supplied if specified.

DRY-TYPE TRANSFORMERS

Type AE—Two coil single-phase. Ratings 1-10 kva—Designed for wall mounting, and suitable for indoor or outdoor installation. 15-100 kva—Designed for floor or platform mounting. For indoor service only. Type AP two coil three-phase dry-type transformers and single-phase and three-phase dry-type auto-transformers are also available.



WAGNER ELECTRIC CORPORATION
4360 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

ELECTRIC MOTORS
TRANSFORMERS
INDUSTRIAL BRAKES
AUTOMOTIVE
BRAKE SYSTEMS—
AIR AND HYDRAULIC

These Rubber Plating Masks Prove That Spencer

SHORT RUN Production Facilities Solve Production Bottlenecks!



Flexible mask

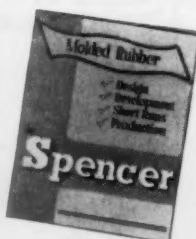
Before plating

After plating

PROBLEM: A prominent gear manufacturer needed only a limited quantity of rubber plating masks—yet each had to conform exactly to the intricate gear contours and withstand the corrosive effects of plating compounds.

SOLUTION: Spencer ingenuity and craftsmanship produced a set of details that fitted the gears to minute tolerances—Spencer's "tailor made" rubber outperformed, outlasted previous masks under the most rigorous shop usage.

If your product requires a molded rubber component, send today for this comprehensive new Spencer brochure... discover how the complete design, development, short and production run facilities available at Spencer can raise product quality, lower production cost!



Spencer

Rubber Products Co.

100 Chapel Street
Manchester, Conn.

Circle No. 498 on Inquiry Card—Page 17
228

New Truck Holds 21% More Payload, Loads Faster

With a newly designed truck, the Coca Cola Bottling Co., Miami, Fla., finds it can load 378 cases in 6 minutes, compared to old style trucks that held 296 cases and took 40 minutes to load. The 82 extra cases simply ride in place of hundreds of pounds of bulk and dead-weight trimmed off in designing for high strength steel. Bigger loads mean fewer returns for reloads and doubling back over previously covered territory.

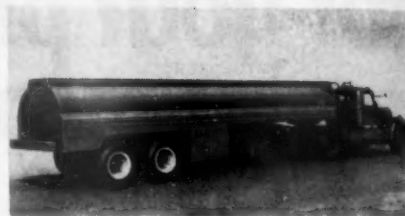
Circle No. 263 on Inquiry Card—Page 17

Pressure-Sensitive Labels Cut Labeling Time in Half

McQuay-Norris Mfg. Co., St. Louis, Mo., uses pressure-sensitive labels in 17 different sizes to label stock containers for quick identification. Used in distributor's stock-rooms, the labels can easily have parts numbers hand-stamped or written in. Elimination of moisture for applying and annoyance of sticky fingers and glue pots has made handling of labeling jobs much more rapid and efficient.

Circle No. 264 on Inquiry Card—Page 17

Strong, Light Gage Steel Eliminates Dead Weight



Fabrication from lighter gage, high strength steel instead of ordinary carbon steel results in the elimination of 2600 lbs. of dead weight from a 10,000 gallon tank-wagon. This means that, when fully loaded, an additional 420 gallons of gasoline can be carried. At \$3.00 per gallon yearly delivery, an annual saving of \$1250 results.

Circle No. 265 on Inquiry Card—Page 17

Office equipment cost-saving case histories appear in the next section. Additional case histories on industrial products begin on page 362.

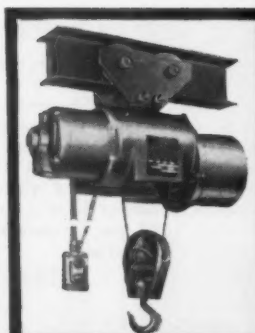
Make heavy handling jobs easier with

CHESTER Electric HOISTS

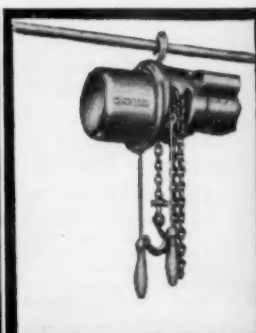
Now, an outstanding new line of Chester Electric Hoists is available to help you put more heavy handling jobs on a paying basis in your plant.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us for specification folders, E 853 and EC 953.

Remember Chester too, for the complete line of Spur Geared Hand Chain Hoists and Overhead I-Beam Trolleys. 1/4 to 25 ton. Ask for catalog.

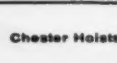
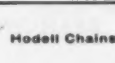


Model E: 5 sizes, 1/4 to 2 ton. Flexible wire rope-cable lift, pendant push button control. Lifting speeds 15 to 30 f.p.m.



Model EC: 3 sizes, 1/4 to 1 ton. Welded alloy steel link chain, pendant rope control. Lifts adaptable up to 66 ft.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio



For more Information Circle No. 499 on Inquiry Card—Page 17

For More Information Circle No. 500 on Inquiry Card—Page 17→

Office Equipment and Supplies section of PURCHASING Magazine

MAY, 1954

Good lighting and comfortable working areas add much to the overall efficiency of this office of the Norton Company, Worcester, Mass.



PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION

205 EAST 42ND STREET, NEW YORK 17, N. Y.

UNIVERSITY OF MICHIGAN LIBRARIES

Payrolls systems are an easy and efficient method of handling the work in figuring employees wages. Simultaneous entering of figures on several accounting records at one time eliminates the possibility of errors and saves time. While this tool is primarily a special accounting aid



. . . the adding machine, also commonly associated with payroll and accounting procedures, is a much more flexible item. In addition to its basic mathematical functions, the adding machine can be applied, throughout the office, for any operation calling for numerical listing or recording.



There's Profit in Office Buying

By G. H. Gutekunst, Jr.



AN office's value is determined by the smoothness of its work flow; the speed and accuracy with which incoming and outgoing data are processed. Economy and profit, in the office equipment purchasing operation, are based on the idea of stimulating and improving the efficiency and work output of the office.

Following through on these principles, it becomes evident that the soundest office buying policy is one that recognizes the existence of potential bottlenecks and eliminates



Visible record systems occupy little space and are extremely economical in applications calling for constant reference and entries. Colored signals are often used to provide immediate "sight" reading.

Banks of counters give greater accuracy in tally operations by eliminating operator fatigue and providing an easier method of controlling tabulations.



Dictating machines have proven more and more valuable during the past few years. This method (right) that uses a telephone-type apparatus to record on a central recording system permits the "pool" typist (far right) to handle the work of many low-volume dictators. Her electric typewriter assures fast and attractive finishing of letters and memos.



them before they develop or become so acute as to slow down, or even stop, the normal work flow of the office. It is an approach that looks at the office buying operation as a long-term investment rather than a series of fast, temporary solutions to problems that suddenly crop up.

Such a buying method, however, calls for close teamwork between the office management and purchasing functions; a combined effort that forms a single, active unit out of the skills of these two important

operations. It is this office management-purchasing team that can effectively plan and carry out a program that takes into consideration the many factors that must be analyzed in buying machines for their potential use.

One factor, of considerable importance, is an understanding of the value of what might be termed "special purpose equipment" to prevent the "mis-use" of existing machines. Take, for example, the copy-

(Please turn to page 252)

WHEREVER YOU ARE...



FILES ARE
YOUR BEST BUY!



BETTER BUILT FOR BETTER BUSINESS

Many companies today are conclusively proving the advantages of ASE files. ASE offers you more filing capacity per unit . . . greater ease of operation . . . distinctive design . . . superior construction . . . attractive, permanent Bonderized finishes — a long list of exclusive advantages that become more and more evident to you in efficient daily service.



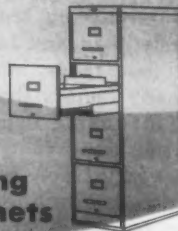
desks



tables



chairs



filing
cabinets



blueprint
files

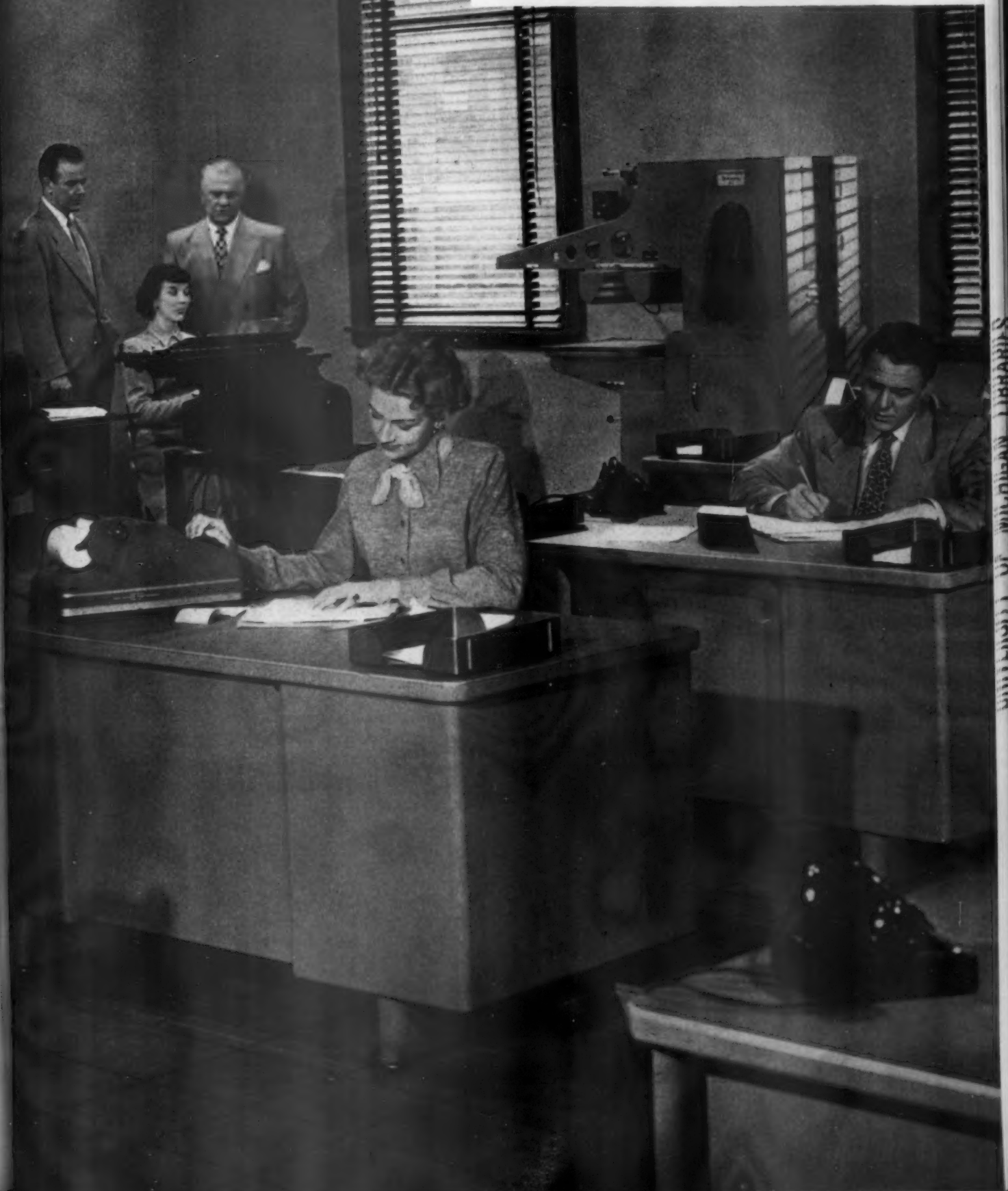


wardrobe
cabinets

see the ASE line
at your dealers today.

ALL-STEEL EQUIPMENT INC. • Aurora, Illinois

Office Equipment



UNIVERSITY OF MICHIGAN LIBRARY



Space And Time Savings In Blueprint Reference Center

Considerable savings in space plus simplification of the work of file clerks was the result of an installation of motorized files by Douglas Aircraft Co., Inc., Santa Monica, Calif. One clerk now controls 150,000 reference cards in the firm's blueprint control center in about 80 square feet of floor space. Previously, the cards were housed in standard seven-drawer, 14 compartment files. New and changes prints average 175 daily.

CIRCLE NO. 266 ON INQUIRY CARD—PAGE 17

Central Dictating System Saves In Installation And Maintenance

The Scovill Manufacturing Company, Waterbury, Conn., estimates that its new telephone-type central dictating system saves nearly 45% in basic installation and 60% in yearly maintenance. Independent of the company's telephone system, four machines handle 73 persons at 38 dictating stations—some as far as a mile away. Special outlets provide portability within a department.

CIRCLE NO. 267 ON INQUIRY CARD—PAGE 17



50% More Employees In Area With Modular Equipment

Modular office equipment enables an insurance company to accommodate 50% more persons in one of its departments. In addition, the breaking up of the area through the use of partitions has eliminated disturbing noises and created an apparent individuality of work stations. The whole plan has materially contributed to improving the working facilities with a proportional increase in efficiency and output.

CIRCLE NO. 268 ON INQUIRY CARD—PAGE 17



VELVET • ball *PEN* • cil

the pencil that writes with ink

- lightweight and well-balanced for greater writing ease
- writes better and faster . . . never grows shorter
- won't leak, blot, flood, smear . . . never needs refilling
- filled with permanent, non-fade ink that's banker approved
- nothing to turn, push or click . . . new ink-control insures instant starting

VELVETS
are
nationally
advertised
in



every office
needs BOTH VELVETS*

- exclusive Velvet homogenized process produces finer, perfectly mixed lead . . . clearer, blacker lines

- smoother writing with no hard spots, no soft spots

- stronger because exclusive Pressure-Proofing clinches wood to lead, ends internal breaking

- for the money, the finest pencils you can buy

VELVET pencil

the pencil that writes with homogenized lead

American Pencil Co., Hoboken, N. J.

*Write for free Velvet sample kit or order from your commercial stationer.



50th year
Venus . . .
trademark
of fine
craftsmanship
in pencils
and pens

Office Equipment



\$43,000 Accounting Installation Saves \$60,000 In Expenses

Payroll work formerly using 22 employees is now handled more efficiently and smoother by 14 operators and a battery of accounting equipment by the American Seating Company, Grand Rapids, Mich. A \$43,000 installation of accounting machines saves \$60,000 a year in accounting expenses—an annual return of 140%.

CIRCLE NO. 269 ON INQUIRY CARD—PAGE 17

Copying Machine Saves \$1500 Per Month In Paperwork Routine

The John Pritzlaff Company, midwest hardware wholesalers, has reported an average saving of \$1500 per month through the integration of a copying machine into the company's paperwork routine. The machine enables billing on the same day as shipping, speeds filling of orders and reduces clerical expense and costly errors.

CIRCLE NO. 270 ON INQUIRY CARD—PAGE 17



Electric Typewriters Increase Production Up to 40%

A Cleveland manufacturer of electrical products measured the increase in typing production realized with electric machines by adding stroke counters to the machines. One station, counted before and after electric installation, showed an increase from 56,000 strokes daily to 74,000 strokes—32%. Another station showed an increase of 40%. Average production of all stations, with electrics, is 83,000 strokes per day.

CIRCLE NO. 271 ON INQUIRY CARD—PAGE 17

Compare... and get more for your duplicating dollar!

Before you buy
any duplicator
check it against
this chart

	GESTETNER 260	OTHER
Always ready for instant use?	YES	
No pads to change—no ink leakage?	YES	
Continuous, automatic inking system?	YES	
Quick, clean color change?	YES	
Edge to edge printing?	YES	
Paste ink for cleanliness—sharper copy?	YES	
Variable speed and position adjustments?	YES	
All controls on operator's side?	YES	



For simple, clean, low-cost operation...
there's nothing like a

Gestetner

Duplicating at its finest... since 1881

By any standard of comparison—whether it be original cost, simplicity of operation, cleanliness or reproduction efficiency—the Gestetner 260 is today's best duplicator buy. Compare, and see for yourself.

Ask for your copy
of this useful booklet
... and for the name of your
nearest Gestetner Dealer

Gestetner Duplicator Corp., Dept. 25, 50 McLean Ave., Yonkers 5, N. Y.
Gentlemen: Please send me a copy of your new booklet
"30 Ways To Get The Most From Your Duplicating Equipment".

NAME.....
COMPANY.....
ADDRESS.....
CITY, ZONE, STATE.....

SALES AND SERVICE FROM COAST TO COAST

For More Information Circle No. 504 on Inquiry Card—Page 17

MAY, 1954

239



Xerography Shows \$1185 Monthly Savings In Reproduction Work

Piasecki Helicopter Corporation, Morton, Pa., reports a saving of \$1185 per month in the preparation and reproduction of a wide variety of paper work. Drafting and engineering manuals, training course books, office and factory forms and government contracts are produced quickly, and accurately, from offset paper masters prepared through the xerographic process.

CIRCLE NO. 272 ON INQUIRY CARD—PAGE 17

Self-Adhesive Filing Labels Cut Labor Costs By 53%

An estimated annual saving of more than \$4300 is reported by a large insurance company through the use of special self-adhesive file folder labels. Although costing more than conventional labels, they reduced labor costs by 53% through increased speed and ease of application. Elimination of moistening and folding plus lack of glue-sticky fingers, enables high-speed application.

CIRCLE NO. 273 ON INQUIRY CARD—PAGE 17



Relay Time Cut in Sending Orders To Distant Plants

Purchase orders received at a central office and then relayed to four subsidiary furniture factories producing different items and located at a distance from each other proved an annoying and expensive problem. It was solved, at a considerable money and time saving, by having the original typed on translucent material and copies run off on a direct copying machine. Each factory was assigned a portion of the form so that one distribution solved all location problems.

CIRCLE NO. 274 ON INQUIRY CARD—PAGE 17



The Saving Touch

cuts typing costs

the
new

IBM
TRADE MARK

electric
typewriter

The wear-and-tear you save your typists when you switch from manual typewriters to fast IBM Electrics means big dollar savings to you.

Actually, IBM's easy, fingertip touch and electric control greatly increase typing production through saving 95.4 per cent of the energy required to operate a manual typewriter. *A whole hour's typing on an IBM requires less energy than 3 minutes on a manual!**

Add to this the benefits of finer-looking work, better morale among your staff, greater prestige among your customers, and it's easy to see why business firms have bought more than 3 times as many IBM's as all other models of electric typewriters combined!

For full information, write Dept. **PR-1**, International Business Machines, 590 Madison Ave., New York 22, N. Y.

*By actual mechanical measurements, of inch ounces of energy for key, space bar and carriage return operations.



Printing Calculators Handle Payroll Department Tasks

Using printing calculators to handle the complex problems of the payroll department has been a great saving of time and money, according to the National Cylinder Gas Company, Chicago. Training of new employees is simplified and consumes less time because of simple operation and, in itself, represents a considerable saving through the speeding up of the training period.

CIRCLE NO. 275 ON INQUIRY CARD—PAGE 17

Shipping Reference Rate File Saves \$200,000 Annually

A firm in Dayton, Ohio, uses an instant-reference rate file for checking rates on incoming and outgoing shipments, which assures them the lowest possible rates. Based on a rotary file installation, savings on incoming and outgoing shipments are estimated at \$200,000 annually. Rate reference time on their own shipments has been cut 90%.

CIRCLE NO. 276 ON INQUIRY CARD—PAGE 17



Records Center Cuts Space Costs Up To 80%

Hamilton Standard Division of United Aircraft Corporation, Windsor Locks, Conn., has saved \$2.00 for every cubic foot of records now stored in a specially designed records center. Such centers generally cut space costs by 50 to 80 per cent and reduces equipment costs by 70 per cent. At the same time, the company retains complete reference control over all records.

CIRCLE NO. 277 ON INQUIRY CARD—PAGE 17



Photocopying Saves Time— Protects Vital Records

Instead of retyping, Wolverine Shoes & Tanning Corp., Rockford, Mich., uses photocopying to make duplicates of records, etc. Duplicating time is cut by $\frac{7}{8}$ ths on some jobs and retains perfect accuracy with no laborious checking operation. It allows vital records to be kept in one place and eliminates the danger of loss or damage. The copies are used instead in processing stages.

CIRCLE NO. 278 ON INQUIRY CARD—PAGE 17



40% Savings In Labor Costs With Printing Calculators

Figuring production rates and costs daily, monthly and quarterly, in addition to normal applications for payroll, discounts and checking invoices is being done by F & F Laboratories, Inc., Chicago, on printing calculators with 40% savings in labor costs. Actual timing has determined that one girl is freed for two days per week for use on other jobs through their use.

CIRCLE NO. 279 ON INQUIRY CARD—PAGE 17

Magnetic Memory Does 1 Week Tally Job In 1 Day

Stock control over a fluctuation of 10,000 to 15,000 new orders per day on items that have an active sales life of two to three weeks, posed a problem for John Plain & Co., Chicago. A magnetic memory with input-output devices uses 10 average clerks to tally 150,000 items, sort them into 8000 catalog numbers, total each number separately and print them, does the job in one day. It used to take a minimum of one week to do the job with even only fair accuracy.

CIRCLE NO. 280 ON INQUIRY CARD—PAGE 17



Do Your Purchasing Department Records Meet this Standard?

(IF NOT, THEY'RE COSTING YOU PLENTY OF TIME...AND MONEY!)

A CHECK-LIST OF ROUTINE BUYING QUESTIONS WHICH SHOULD BE ANSWERED IN SECONDS...		How much is this information needed?	How long does it now take to answer?
1.	Are the specifications clear for each item requisitioned, in order to insure purchasing exactly what is needed?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
2.	Do your records reflect entire company-wide needs for the same item in order to get effective quantity purchasing?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
3.	Are consumption figures available to show how much an order can be increased or decreased safely under current conditions?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
4.	Is there sufficient lead time to assure buying the item at a reasonable price with assurance of delivery when needed?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
5.	When was the item last purchased? What was the quantity and price? How much delivery time was required?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
6.	Which vendors have good records in supplying the item? Any contracts in force with them, past or present?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
7.	Are there any special buying instructions on this item? Is it made-to-order? Are interchangeable items available?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
8.	What potential suppliers should bid on this particular item? Should any names be added or eliminated from list?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
9.	Is reciprocity a factor and how do your purchases from the vendor compare with your volume of sales to him?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
10.	When should vendor be followed up to insure on-time delivery? What promises were made on last follow-up?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
11.	Have any partial shipments been made on order? What is the balance due? When is the next shipment promised?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
12.	Are accurate costs on each item available for fast reference when required by any department?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes
13.	Which purchase orders need expediting to meet specific production schedules or operating needs?	<input type="checkbox"/> Vital info <input type="checkbox"/> Useful info <input type="checkbox"/> Not needed	<input type="checkbox"/> Days <input type="checkbox"/> Hours <input type="checkbox"/> Minutes

Purchasing today must be a creative task, geared into the overall plans and operations of the entire business organization. The purchasing department needs, and deserves, the best record-keeping tools because of its new place in the top ranks of management planning.

here are some procedures
to save time and
money in the purchasing
department

New Purchase Order System Simplifies Procedures

...Quickly Pays For Itself



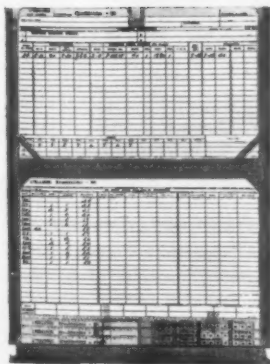
Through the use of a new system which relies on a separate Remington Rand Visible Tip Folder for *each* active order, Southern Railway has greatly simplified its purchasing procedures, reduced costs, eliminated loss of time and cut personnel turnover. Now it is possible to phone the order desk and get from the clerk *immediately*, a complete picture on any account ... number of items bought ... prices paid ... length of time for delivery ... facts on the status of the account. The clerk needn't leave the desk! Obtaining and holding trained personnel and all manner of hidden savings are resulting from this system which pays for itself so quickly.

CIRCLE SN768

Improved Follow-Up Control Results in Office Time Saving of 80%

The Machinery Division of Dravo Corp., Pittsburgh, Pa., currently issue about 15,000 purchase orders a year. In the past follow-through was based on regular paper copies of the orders, which were kept in standard vertical files. Each time reference was necessary, the clerk would remove the order copy from the file, bring it to the proper desk, subsequently refile it. Now, this time-consuming, laborious procedure is eliminated ... with an estimated time saving of 80%. The follow-up copies of the regular set of purchase forms are Kardex forms which remain in four Mobile Kardex cabinets. The proper cabinet is merely wheeled alongside the desk of the expeditor. He refers instantly to the order copy, takes indicated action and makes proper notations without removing the card.

FOR DETAILS OF THIS PROCEDURE SEE X1202



Traveling Requisition Simplifies and Speeds Purchasing

One of the most effective means of simplifying and speeding purchasing developed in recent years, is the visible inventory control system that provides a traveling requisition. Clerks don't have to transcribe an order from an inventory card to a requisition blank. The top card of the inventory pocket, when removed, serves as the requisition. It saves much time because all information concerning suppliers, cost, previous orders placed, past usage, present inventory and other facts required for executive decision are contained right on the form. After the replenishment order is written it is routed back to the inventory pocket for continued use.

GET FULL PARTICULARS — CIRCLE KD375

Increase The Efficiency of Your Purchasing Department



This 20-page, full-color manual pictures in detail the most modern, proved administrative control systems for purchasing. It shows many ways in which the efficiency of a Purchasing Department may be increased. See and examine the methods used by some of the country's leading firms ... when bids are needed ... when placing a purchase order ... when following up a purchase order ... and so on. If you don't have a copy of this book, we urge you to send for it immediately.

FOR YOUR COPY — SIMPLY CIRCLE X1202

Remington Rand

Room 1555, 315 Fourth Ave., New York 10

Kindly circle the literature you desire:

SN768 X1202 KD375

Name _____

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Address _____

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Profit-Building IDEAS For Business

For More Information Circle No. 506 on Inquiry Card—Page 17



Material Control System Shows Two-Thirds Saving In Manpower

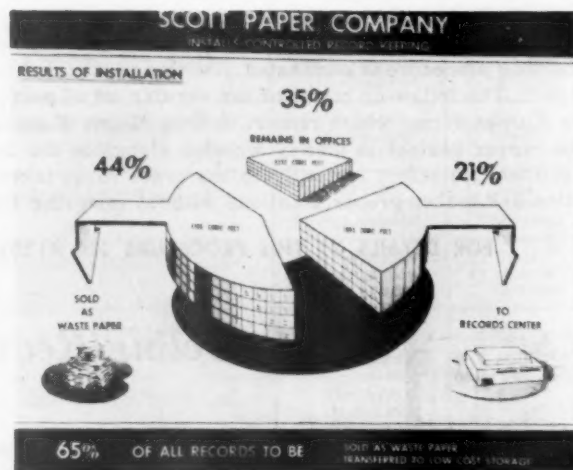
Installation of a simplified material control system by a Rochester machine tool manufacturer brought about a two-thirds saving in manpower and used 80% less floor space. A single operator, using one form, does the job formerly using three operators using four forms. The system controls purchases, reservations, availables and also shows value of inventory.

CIRCLE NO. 281 ON INQUIRY CARD—PAGE 17

Record System Releases \$12,000 Worth Of Filing Equipment

A controlled record keeping system permitted the Scott Paper Co., Chester, Pa., to destroy 42 tons of records—three trailer loads. It vacated 4100 sq. ft. of space and released \$12,000 worth of filing equipment for reuse—enough equipment for the next three to five years. The new system provides a faster reference use without sacrificing important and overall record keeping.

CIRCLE NO. 282 ON INQUIRY CARD—PAGE 17

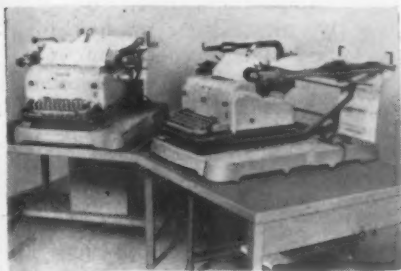


\$302,296 Investment Saves \$359,000 Per Year

Cash registers, accounting machines and adding machines save \$359,000 per year for the Baltimore and Ohio Railroad Company. The machines, representing an investment of \$302,296, handle payroll accounting, check and voucher writing, accounts receivable, disbursement analysis and many others that form a complex operation in the wide-spread railroad company.

CIRCLE NO. 283 ON INQUIRY CARD—PAGE 17

Tandem Typewriter Setup Saves 40% in Billing, Manifest Costs



ABC Freight Forwarding Corporation has realized a 40% saving in the cost of handling billing and manifesting operations with a continuous form machine in conjunction with an automatic typing mechanism. While the operator types freight bills on the "master machine", a manifest is automatically and simultaneously typed on the "receiving machine". This provides accuracy while cutting form handling and carbon paper costs.

Circle No. 284 on Inquiry Card—Page 17

Microfilming Reduces Storage Needs



Microfilming important records promises substantial savings for White's Auto Stores, Wichita Falls, Texas. Considering their present rate of growth, the company estimates that the present file room could accommodate 200 years of microfilmed records. The releasing of this space presents opportunities for more advantageous usage and the microfilm records are, in themselves, a more practical way for the company to keep records for a long period of time.

Circle No. 285 on Inquiry Card—Page 17

Tab Dept. Schedules Work Load on Boards

Over 100 different documents, each needing special handling in the

(Please turn to page 248)

MAY, 1954

BUSINESS EXECUTIVES discover many savings when they know



Tons of envelope paper move into and out of U.S.E. plants each week.

HOW envelopes serve many business needs
WHAT envelopes serve each need well
WHY it pays to specify U.S.E. Envelopes



The raw material for U.S.E. envelope gums is prepared to U.S.E. specifications.



U.S.E. cartons are designed and labeled so that the envelopes stand on edge, as they should to avoid warpage.



Isn't it true? . . . when a man buys printing he takes time to consider type faces, halftone screens, colors, paper and so forth.

But the *Envelopes* may be overlooked until the last minute — and then squeezed into a tight budget!

Suppose you had, at your elbow, a book which tells **HOW** envelopes serve many business needs, and **WHAT** envelopes serve each need well? You could easily fit the correct envelopes into your plans. And suppose you had another book which tells **WHY** it pays to buy *really good* envelopes? You could fit quality envelopes into your budgets. In this way, everyone would be better off!

WHO has these books for you?

U.S.E., the World's largest manufacturer of envelopes, and your envelope supplier. Ask for the complete story: The "Handbook" which tells **HOW** and **WHAT**, and the book "What's in it for me?" which tells **WHY** it pays you to specify U.S.E. Envelopes.

E-481

UNITED STATES ENVELOPE COMPANY Springfield 2, Massachusetts

15 Divisions from Coast to Coast

For More Information Circle No. 507 on Inquiry Card—Page 17

INTRODUCING A NEW AND COMPLETE LINE OF STRATHMORE THIN PAPERS

It is logical for Strathmore to add Thin Papers in rounding out its Handbook lines and the service which we aim to give to the printer and the user of fine papers. Furthermore these lines are simply variations of major grades we have had for many years—Strathmore Parchment (100% Rag) and Strathmore Bond (25% Rag)—lines known and respected everywhere for high quality and values.

STRATHMORE PARCHMENT ONION SKIN

100% RAG CONTENT

STRATHMORE BOND ONION SKIN

25% RAG CONTENT

STRATHMORE BOND AIR MAIL

25% RAG CONTENT

STRATHMORE BOND TRANSMaster

25% RAG CONTENT

Careful research in the Thin Paper field—and the resources and papermaking skill of Strathmore—are incorporated in these new Thin Papers. You can buy these papers with assurance that they will give you complete satisfaction and the highest values in the market. Thin Papers are available now through Strathmore Distributors. Try them. We believe you will like them.

*Now a part of the Strathmore Handbook Lines
and for sale
by Your Strathmore Distributor*

STRATHMORE PAPER COMPANY • WEST SPRINGFIELD, MASSACHUSETTS
For More Information Circle No. 508 on Inquiry Card—Page 17

(Continued from page 247)

Punch Section, are received in the Tabulating Department on daily, weekly, monthly or annual schedules, by General Aniline Corp., Rensselaer, N. Y. Two scheduling boards, one for the flow of work



through punching and the other for the machine section, provide a daily visual control on the status of all operations. It shows the receipt of documents to be punched, flow of work, availability of machine time and approach to report deadlines.

Circle No. 286 on Inquiry Card—Page 17

Single Writing Makes Orders and Follow-Up



A simple order-writing system used by Hallicrafter Corp., Chicago, creates all copies of purchase orders plus a visibly-filed follow-up record in one writing. A specially designed master, from which all copies are run, provides for changes in the order through typing in the correction and re-running the corrected order.

Circle No. 287 on Inquiry Card—Page 17

Payment Operations Reduced from Four Steps to One

Invoice payment operations go from four steps to one with a voucher system used at the Tutwiler, Louisiana, refinery of the Cities Service Corp. By means of a three-part combination check and



voucher with snap-out carbons, and an accounting machine, they print a check and detachable voucher which serves as a remittance advice with invoice dates, shipping numbers, gross amounts, cash discounts, net amounts and totals for each category.

Circle No. 288 on Inquiry Card—Page 17

Plastic Offset Plates Show More Flexibility



Discarding paper offset plates for plastic ones has allowed Crescent Insulated Wire & Cable Co., Trenton, N. J., to fill emergency orders more rapidly and provide more durability and clarity for standard runs. The plates give 4,000 impressions per run and can transfer the format to another plate if more are needed. In addition, modifications and changes are handled easier and last far longer than the previous paper plates.

Circle No. 289 on Inquiry Card—Page 17

Sound Baffles Improve Working Efficiency

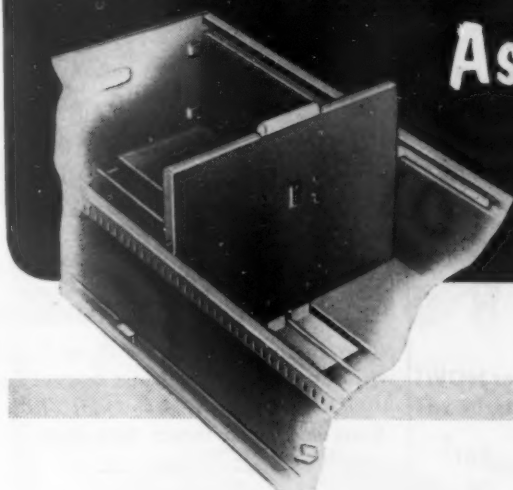
Annoying sounds from office equipment in the bookkeeping department of the Central-Penn National Bank, Philadelphia, no longer disturb employees. Fiberglass panels hanging from the ceiling absorb the sounds which tends to increase

(Please turn to page 250)

This PEERLESS FEATURE

Assures

EASY FILING



One of the outstanding features of the famed Peerless 6600 Series Filing Cabinets is the design and construction of the drawers. All of the drawers for these units are completely welded to assure rigidity throughout their full 26½" filing capacity. In addition the follower blocks are guided along three sides—not just one—to eliminate binding and permit papers in the back to be easily filed without jamming.

All Peerless Filing Cabinets are attractively finished in baked enamel and fitted with distinctive hardware which will harmonize with any office.

For further information, see your regular Peerless dealer, or write us for the name of a dealer near you.

All Peerless Drawers are so constructed that the follower blocks may be readily removed and frames for suspended guides substituted if preferred.



PEERLESS STEEL EQUIPMENT CO.

6624 Hasbrook Avenue, Philadelphia 11, Pa.

New York Chicago Dallas Los Angeles

For More Information Circle No. 509 on Inquiry Card—Page 17

TRY ★ *Star* TYPE CLEANER FREE!

Send for Free Star Type Cleaner NOW!
Write today on business letterhead!



Use this
handy plastic box
later for spare
paper clips, stamps, etc.

Cleans dirt, ink, grime from:

- typewriter type (before and after cutting stencils)
- cylinders
- office machines
- addressing machines
- time stamps
- feed rolls

No dangerous fumes! No mess or bother! Simply press Star Type Cleaner on part to be cleaned... dirt comes away with it!

Clean equipment is easier to use... gives better results... lasts longer. See your stationer now.

EBERHARD FABER

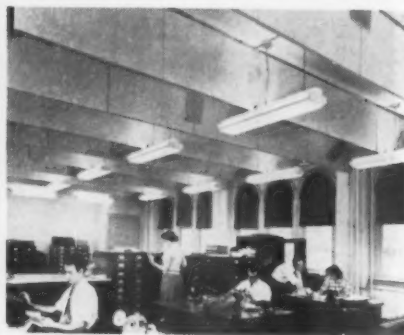
Since 1849

37 GREENPOINT AVE. • BROOKLYN, N. Y.
NEW YORK • TORONTO

TRADEMARKS REG. U. S. PAT. OFF.

For More Information Circle No. 510
on Inquiry Card—Page 17

(Continued from page 249)
the efficiency and speed of the highly important banking department. Employees are more relaxed and



more inclined to tackle their tasks without the interruptions caused by loud noises and buzzes.

Circle No. 290 on Inquiry Card—Page 17

Accounting Equipment Saves \$50,000 Per Year

Savings of more than \$50,000 per year have been realized by a candy and chocolate company's accounting department. Through the use of accounting equipment for accounts receivable, accounts payable, labor distribution, sales distribution and analysis, general ledger and other



accounting jobs, the company finds that the installation repays its cost every eight months.

Circle No. 291 on Inquiry Card—Page 17

Card Check System Saves \$30,000 Yearly



THE SUGGESTION BOX... by Ajax



Perhaps your employees won't take such drastic steps — but they will appreciate the ease and convenience of complete drinking water service.

Complete drinking water service, including AJAX or AERO Paper Cups and dispensers, improves employee morale because it provides clean, sanitary, comfortable and

natural drinking facilities... cuts down absenteeism because it reduces the hazard of transmitted infection. Eight out of ten people prefer it. Ask your paper merchant.

AJAX® PAPER CUPS DISPENSERS CUP FILLERS

UNITED STATES ENVELOPE COMPANY



General Offices: Springfield 2, Mass.

15 DIVISIONS FROM COAST TO COAST



AJAX®
CUPS



AERO®
CUPS



Also COLUMBIAN and
PEERLESS Flat Cups

It pays to deal with the distributor who carries the complete line of paper water drinking cups. C2-M

For More Information Circle No. 511 on Inquiry Card—Page 17

The special checking accounts department of a Westchester, N. Y. bank saves more than \$30,000 per year through a card check system. Only 13 people now control the machines operations, thus releasing 20 employees, of the former 33, for more productive work. Public reaction also was enthusiastic and resulted in a 60% increase in checking accounts.

Circle No. 292 on Inquiry Card—Page 17

System Keeps Records Current—Uses Less Space



Keeping important records current in the personnel department of a Lockwood, Ohio, manufacturer employing 4,000 people, was solved by a simplified seniority and rate record system. Not only did it handle the problem quicker and more efficiently, but the installation required 80% less floor space.

Circle No. 293 on Inquiry Card—Page 17

Product Report Cut by 4 Hours with Copier



Daily reports on 75 key products presented a tough problem for a large drug company. They solved it with a direct copying machine that speeds report handling through a translucent original that permits posting and checking of penciled figures and eliminates the need of typing and rechecking. Reports are made available four hours earlier and with a greater degree of accuracy.

Circle No. 294 on Inquiry Card—Page 17

THE PEN THAT FILLS ITSELF



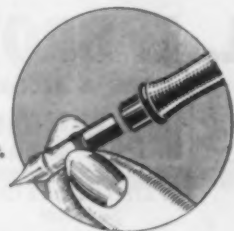
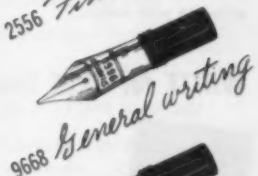
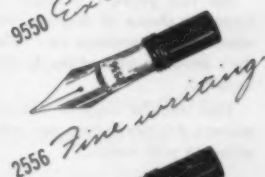
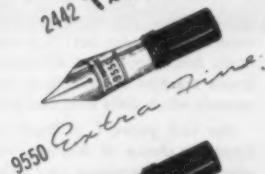
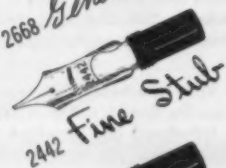
MODEL 444

The PERFECT desk set for busy desks. Pen always ready to write—automatically fills itself from giant ink fountain every time pen is returned to socket. Fountain-base needs ink only 4 times a year in normal use.

- ① Finger grip never touches ink. No chance for ink to touch you.
- ② Fountain-base "ink-locked" against accidental spillage. Only the pen unlocks the ink.
- ③ Fountain-base holds 40 times more ink than ordinary fountain pen. Won't leak. Won't flood. Easy to clean as a saucer.

Ask your stationer for a demonstration.

CHOOSE
the right point for
the way you write
... by number



TO SELECT OR REPLACE... HERE'S ALL YOU DO.

More than 28 interchangeable point styles
for personal use or for public counters.

Esterbrook

DESK PEN SETS

THE ESTERBROOK PEN COMPANY, CAMDEN 1, NEW JERSEY
The Esterbrook Pen Company of Canada, Ltd., 92 Fleet St., East, Toronto, Ontario

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For More Information Circle No. 512 on Inquiry Card—Page 17



"Our experience shows that superior products add only negligibly—if at all—to total costs. The difference—if any—is usually returned many-fold by superior service, satisfaction, dependability and value." *Robert H. Cain, President, John E. Cain Company, Boston, Mass. and President National Potato Chip Institute.*

Your letterheads and records are examples: The finest L. L. Brown paper constituting a letterhead and envelope costs less than the postage. The most durable L. L. Brown record paper adds but 1% to total accounting costs. Microscopic cost differences! Yet they insure prestige and quality in letters... and records which defy time and hard use.

For 105 years, L. L. Brown papers have been the choice of discriminating executives whose correspondence must reflect them and their products and whose records are worth keeping.

Your regular supplier knows L. L. Brown papers. Ask him to help you select those best suited to your needs.

WRITE for FREE booklet...



"How to Get Greater Service and Value from Your Records and Letters". Here is a reliable guide to selecting the right paper... for recording or correspondence.

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LETTER & RECORD
PAPERS
SO MUCH EXTRA VALUE FOR
SO LITTLE EXTRA COST
Since 1849

L. L. Brown Paper Co. Adams, Mass.	E 3
Please send me FREE copy of "How to Get Greater Service and Value from Your Records and Letters".	
Name _____	
Title _____	
Company _____	
Street _____	
City _____	State _____

For More Information Circle No. 513
on Inquiry Card—Page 17

252

There's Profit in Office Buying

(Continued from page 233)

ing machine. It is customary, in many offices, to have copies of letters, invoices, orders, etc., prepared on typewriters for distribution to several points for joint action. This is all well and good as the versatility of the typewriter makes such an application relatively easy. However, a point that requires careful examination is the volume of typewriter copying being handled in all typing stations in the office. On the evidence of the total work load of copying and the normal typing work load, it might be advisable to turn all copying problems over to a single copying unit rather than run the risk of building up a backlog of typing jobs. After all, these machines are simple enough to be operated by almost anyone and it would relieve a highly skilled typist from a relatively simple job.

Correct Usage

Mis-use of equipment also lies in another direction—the demand for work beyond the point for which the equipment was designed. Take an adding machine, for instance, and the value in its ability to be applied to a host of numerical listing problems. It has been designed for extreme proficiency in two arithmetic functions—addition and subtraction. Yet, to demand a volume of multiplication, division or complex figure-work by the machine is a wasteful and costly practice. Its mechanical setup is such that it multiplies by repetitive addition and divides by repetitive subtraction or handles both functions through a table of reciprocals. Another mechanical point is its cycling rate which must take into consideration that an adding machine prints out each stage of its operation on a tape. On the other hand, a calculator has been scientifically designed to work at high speed on complex problems calling for multiplication and division as the main arithmetic functions. Therefore, while generally more expensive than adders, the calculator will handle a greater volume of complex mathematics much faster than the adder. It, too, has its limitations in that it is rarely considered a practical solution to addition and subtraction problems because of its skipping the printing out process, its initial expense and its "job rating" for high speed handling of involved work.

The efficient use of trained personnel is a factor that is the underlying reason behind much of office equipment buying's potential economy and profit. The copying technique, as pointed out before, is one example. However, a more vivid one is seen in the use, or lack of use, of dictating equipment. First of all, it is untrue that a dictating machine is valuable only in a large company. Actually, the machine can be more valuable, if not equally valuable, to a small operation. Look at it this way. The method of dictating that uses a stenographer to transcribe the spoken words into the "hieroglyphics" of Pittman or Gregg, requires two people. That means that the steno, who is usually a typist, file clerk, etc., in a small operation, is removed from normal work flow activities during the dictating period. During this period her work lies dormant and will be immediately increased in its burden by the streams of curlicues she will have to decipher in her steno pad. Now, not only is her typing work backing up but, it adds to her filing and increases the pressure of accomplishing volume production in fewer hours than the burden demands.



Find the record you want when you want it—ACCO-bind all your business papers. With ACCOPRESS Binders of fine press-board you'll get the efficiency and convenience of loose leaf binding for letters, orders, contracts, invoices, reports, etc. combined with low cost, long life economy in filing. Large capacity (expand up to 6"). Stack flat. Choice of colors and sizes for every need. Ask your stationer. Remember... ACCO-bound papers are SAFE papers.

ACCOBIND folders
ACCOPRESS binders
PIN-PRONG binders
(for marginal multiple punched forms)
ACCO punches
and other filing supplies

ACCO PRODUCTS, Inc.
Ogdensburg, New York

In Canada: ACCO Canadian Co., Ltd., Toronto

For More Information Circle No. 514
on Inquiry Card—Page 17

PURCHASING

With the dictating machine, however, only one person is involved whose normal work flow is partly dictation. The equipment permits him to dictate letters more freely because he is not concerned with extending the dictating session nor bothered as much by interruptions. He can dictate as many or as few letters as he pleases and can more easily recall what he has said by the simple matter of playing the recording back.

In another way, such a machine in a medium sized or large company readily dove-tails into an "installation" rapidly gaining popularity—the central typing pool. In the pool, a select group of highly skilled typists, usually operating electric typewriters, have dictated material distributed to them in such a way as to produce an amazing volume of work daily.

Replacing Old Machines

In a discussion of this sort, it is almost impossible to stress the extreme importance of a practical and adequate plan for replacing old equipment. Much of the difficulty lies in the fact that not enough thought is given to the difference between mechanical life and service life. While most office machines have long mechanical lives, their practical service life is considerably less. Just because a specific machine is still putting out the clicks and clacks that mean it's still operating well, it does not mean that machine is still handling its jobs as efficiently or as fast as the work flow of the office demands.

For instance, an ordinary letter is a "representative" of a company and creates a favorable or unfavorable impression by virtue of its appearance as well as its grammatical correctness. Modern letterheads are works of art and paper making research has given us a wide variety of fine papers, both of which are instruments in presenting one company to another. So, what happens? When it comes to putting the words on paper, an old typewriter with its worn typefaces, or even mis-aligned type, is expected to enhance the overall appearance of the page.

Sound office buying should be thought of as an investment. It's a means of solving potential office problems on the basis of long-term usage and value. As a team effort, it balances the techniques of the office management and purchasing functions to support an economical and profitable approach to a very

(Please turn to page 254)

"CORRECT"

PENCIL SHARPENER PLACEMENT





ACTUALLY REDUCED OVERHEAD

AND INCREASED OUR

OFFICE EFFICIENCY."

says Virgil Waters, director of Purchasing, Utility Trailer Manufacturing Company of Los Angeles. "The huge cargo-carrying trailers we build require an infinite amount of paper work before they're completed. We must take advantage of anything that will help to reduce overhead. That's why we have increased the number of pencil sharpeners in the plant, the office, and the engineering department to help us eliminate lost motion, to increase efficiency, and to reduce errors."

Apsco
products inc.

Let ApSCO help you reduce your operating costs!



APSCO PRODUCTS INC.
Dept. P-5
336 North Foothill Road
Beverly Hills, California

Gentlemen:
Please send me your free booklet on reducing my company's overhead.

NAME.....
(Attach coupon to your letterhead, or business card and mail today!)

For More Information Circle No. 515 on Inquiry Card—Page 17

SIGNALS FOR BUSINESS

Nu-Vise
 METAL
 PROJECTING
 SIGNALS

Nu-Viz
 METAL
 SIGNALS
 for "visible" systems

Cellugraf
 TRANSPARENT
 SIGNALS
 for "visible" systems

Exert new control over any type of office system with Graffco Signals. They never forget. Always there to stop, start, check, alert. Your office supply dealer will be glad to explain what they can do for your particular needs.

GEORGE B. GRAFF COMPANY
 54 Washburn Ave., Cambridge 40, Mass.

For More Information Circle No. 516 on Inquiry Card—Page 17



(Continued from page 253)

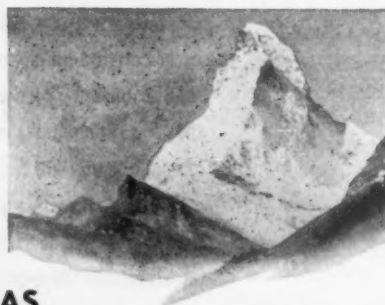
complex buying operation.

Purchasing's individual contribution to the team effort is, as in all buying, much more than the mere placing of orders. It is based on three cardinal principles—investigation, analysis and evaluation. First of all, it views the total office operation in the light of its individual components as a series of applications with potentials and limitations. It considers equipment available in the field in terms of how such machines fit into the work flow of the office, how it improves the potentials of the applications and whether or not it materially adds to the office operation as a unit. Along the same line of reasoning, the purchasing function has to compare mechanical advantages, limitations, service and mechanical life and cost as a basic "yardstick" for measuring the inherent value of a piece of equipment. All these factors have to be tied in with what end result is needed, how it can be expanded, etc., until a clear picture develops that shows the way toward the buying of the correct item.

As an example, consider the diversity of the duplicating field. Basically, it is important to know the

GO PLACES with Weldon Roberts Erasers

Swiss National
Travel Office
Photo



SUPERB AS SWITZERLAND'S MATTERHORN!

The Swiss respect their superlatives. They specify Weldon Roberts Erasers, as do users the world over—to Correct Mistakes In Any Language—to assure uniformly superb erasing of all writing by hand and by business machines.

Weldon Roberts uniformity, quality and versatility will save time, ease work, gratify everyone in your office. Describe your erasing requirements to your dealer; ask him to recommend exactly-suited Weldon Roberts Eraser styles and textures.

WELDON ROBERTS RUBBER CO.

365 Sixth Avenue, Newark 7, N. J.
 World's Foremost Eraser Specialists

JET ERASER. Cylindrical stick eraser of finest rubber, encased in attractive, transparent plastic holder. Red rubber for pencil erasing; gray rubber for erasing typewriting and ink. Pocket clip style for general use. Brush Whisk style for typists.



For More Information Circle No. 517 on Inquiry Card—Page 17
 254

IF YOU ARE NOT NOW RECEIVING A PERSONAL COPY OF PURCHASING EACH MONTH

You are missing in every issue of PURCHASING seven services that would cost hundreds of dollars if bought separately—

1. Washington Report for Purchasing Agents
2. Poll of Purchasing Opinion on Current Purchasing problems
3. Price, Production, Inventory Statistical Analysis that help you foretell price changes
4. Inventory (illustrated) of new products
5. Forms that lubricate purchasing department operation
6. Free catalog service
7. Purchasing Legal Service—interpretation of latest legal decisions affecting purchasing

Fortune favors the man well-informed in his own profession.

You can get the full benefit from the wealth of valuable information in PURCHASING by receiving it personally each month. Just fill in, clip, and mail this coupon.

PURCHASING, 205 E. 42nd St.
 New York 17, N. Y.

So that I will receive PURCHASING without delay each month, and in order that I may keep and clip it, send it to me personally as noted below—\$4 for one year in U. S., U. S. Possessions and Canada; elsewhere \$10 a year.

Mr.
 Title
 Company
 Address

PURCHASING

types and volume of materials to be reproduced in order to correctly examine the methods of duplication and select the right one. Then, the destination of the finished material should also be considered; is it for internal or external use? All this must be examined in the light of the potentials and limitations of mimeographing, spirit duplication, gelatin handling or the offset process. Then the individual manufacturers and their various models have to be evaluated to see which one meets the requirements best. After all this, the whole picture is re-worked to find out how the duplicating installation will be affected by an increase in work load, the addition of more varieties of forms and its overall time saving value. Again, the simplicity of the machine's operation in terms of its efficiency is vital in determining its cost saving factors. Also, how skilled must the operator be and how long does it take to train an employee to peak proficiency?

Costly Mistakes

Finally, after all the investigation and analysis, it is possible to evaluate the initial cost of the machine in terms of how it will increase the efficiency and production of the office over a long period of time.

Unfortunately, office purchasing has no easy way out for mistakes. Once a machine is bought, it's there for some time and there is no simple, sure or easy way to liquidate it. And, with today's wide variety of mechanization in the office, it's easy to make mistakes when buying on the "spur of the moment" or using buying merely as a quick solution to a problem.

Sound Investment Pays

It's the office equipment investor that will come out on top. Already, the indications are that the promise of the electronics field will have far-reaching effects on office automation. The purchasing policy that is based on sound investment principles is laying the foundation not only for building better and more efficient offices with today's tools, but preparing for the rise of electronic automation.

In office equipment purchasing, there are two ways to buy—the easy way and the right way. The easy way is to "rubber stamp" requests. The right way is to become an active member of a team and give the office what it needs to become more efficient and more productive.

What do you mean—
"It's the Best?"



You're right to ask — and we're proud to tell you why Webster's new DURAMETRIC Carbon Papers are the finest you can choose. Look at these reasons and see if you don't agree!

- **Top Quality** for ideal impressions. Each sheet is individually inspected before it leaves the Webster plant.
- **Won't Curl** — Shurflat treatment is applied to every sheet.
- **Crispness** for easy handling, **DURABILITY** for long use, are built right into every sheet.
- **Webster Scale Edge** — measures typing space. Saves time, helps prevent errors, protects fingers from carbon.

Like all Webster products, DURAMETRIC is continuously tested to insure your getting the same fine performance with every purchase. There's a DURAMETRIC weight and finish for every office need. Ask your stationer about it . . . or write to us on your company letterhead, for a free sample. Please specify make of typewriter, and number of carbons usually required. Address

F. S. WEBSTER COMPANY
7 AMHERST STREET
CAMBRIDGE 42, MASSACHUSETTS

For More Information Circle No. 518 on Inquiry Card—Page 17

Prove by comparison tests how Parker O-rings seal better...

You get trouble-free, leakproof sealing when you use Parker O-rings. We invite you to prove it for yourself.

Let your Parker distributor check your specifications and recommend the O-ring which is exactly right for your specific application. Then compare Parker O-rings with other makes in actual use under your own service conditions.

Parker O-rings are precision molded of superior compounds . . . compounds that have been developed as a result of thousands of laboratory tests. These compounds have been rated for tensile strength, elongation, maximum compression set, and resistance to tear and abrasion. Fluid and temperature tests have determined their resistance to oils, fuels, or chemicals at high or low temperatures. Service tests make sure that these rated characteristics are maintained.

So compare actual samples. Prove for yourself how Parker O-rings . . . precision-molded of superior compounds . . . seal better and last longer.

What's more, you can simplify your O-ring procurement by specifying Parker O-rings. Parker has molds for every standard size and makes rings for every service. For complete information, call your Parker O-ring distributor, or write for Catalog No. 5100.

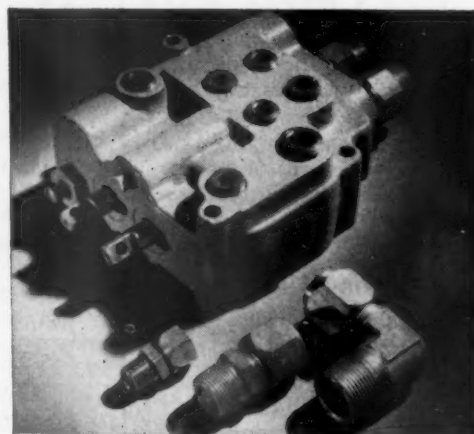
RUBBER PRODUCTS DIVISION
The Parker Appliance Company
Section 503, 17325 Euclid Avenue, Cleveland 12, Ohio
1538 South Eastern Avenue, Los Angeles, California

Parker

Hydraulic and fluid
system components



Call your Parker distributor for complete information about O-rings and how they are used. Ask him for your copy of Catalog No. 5100.



What other Parker products interest you? Hydraulic control valves? Triple-lok or Ferulok tube fittings? Write Parker for information.

CALL YOUR NEAREST DISTRIBUTOR FOR PARKER O-RINGS

Akron 9, Ohio B. W. Rogers Co.,
850 South High St.
Baltimore 2, Md. Phelps Packing & Rubber Co.,
104 South Gay Street

Boston, Mass.
Buffalo 3, N. Y.
Cedar Rapids, Ia.
Chicago 38, Ill.
Chicago 22, Ill.
Cleveland, Ohio
Cleveland 14, Ohio

Irving B. Moore Corp.,
65 High St.
Hercules Gasket & Rubber Co.,
327 Washington St.
Globe Machinery & Supply Co.,
309 8th Ave. S. E.
Air Associates, Inc.,
5315 W. 63rd St.
W. H. Salisbury & Co.,
401 North Morgan St.
Cleveland Ball Bearing Co.,
3865 Carnegie Ave.
B. W. Rogers Co.,
1279 East 12th St.

Dallas 9, Tex.
Dallas 9, Tex.
Dayton 10, Ohio
Detroit 1, Mich.
Fort Worth 7, Tex.
Houston 1, Tex.
Indianapolis, Ind.

Air Associates, Inc.,
3214 Love Field Dr.
Metal Goods Corp.,
6211 Cedar Springs Rd.
J. N. Fauver Co.,
1534 Keystone Ave.
J. N. Fauver Co.,
49 West Hancock St.
Adco Industries,
3414 Camp Bowie Blvd.
Sterling Packing & Gasket Co.,
Nance at Hardy
Avels Sales & Engineering Co.,
1728 West 16th St.

r...last longer



Compare actual samples. Ask your Parker O-ring distributor to check your specifications and give you samples of the right O-ring for your application. Then

prove for yourself the advantages of using Parker O-rings by comparing them impartially with other makes in actual use under your own service conditions.

Kansas City, Kan.

Standard Products, Inc.,
3041 Fairfax Rd.

Knoxville 6, Tenn.

Leinart Engineering Co.,
412 E. 5th Ave.

Los Angeles, Cal.

Aero Bolt & Screw Co., Inc.,
1071 Arbor Vitae Ave., Inglewood

Miami, Fla.

Air Associates, Inc.,
International Airport

Milwaukee 4, Wis.

Allrubber Products & Supply Co.,
612 South Second St.

Minneapolis 5, Minn.

Van Dusen Aircraft Supplies, Inc.,
2004 Lyndale Ave. South

New York 77, N. Y.

Durham Aircraft Service Inc.,
56-15 Northern Blvd., Woodside

New York, N. Y.

Oakland 8, Cal.

Philadelphia 40, Pa.

Pittsburgh 24, Pa.

Sacramento 14, Cal.

San Francisco 3, Cal.

Seattle 6, Wash.

Nielsen Hydraulic Equipment, Inc.,
4 Penn Place Pelham Manor 65

Bearing Specialty Co.,
2928 Poplar St.

Goodyear Supply Co.,
1605 W. Hunting Park Ave.

Bearing Distributors, Inc.,
4515 Liberty Ave.

Bearing Specialty Co.,
2314 "J" St.

Bearing Specialty Co.,
790 Brannan St.

Palmer Supply Co.,
222 Westlake North

St. Louis 16, Mo.

St. Louis 3, Mo.

Tulsa 3, Okla.

Wichita 11, Kan.

Metal Goods Corp.,
5239 Brown Ave.

Sealtite Corp.,
1925 Washington Ave.

Standard Products, Inc.,
2208 N. Sheridan

Standard Products, Inc.,
650 E. Gilbert

Canadian Representative: Railway & Power
Engineering Corp., Ltd.

Export: Kerody Marine Corp., 12822 Simms Ave.,
Hawthorne, California, U.S.A.

For More Information Circle No. 519 on Inquiry Card—Page 17

MAY, 1954

257

AMONG THE Associations



Your Convention Program

Sunday, May 23

INFORM-A-SHOW—OPENS 2:00 P.M.

The Conrad Hilton Exhibition Hall

The Inform-A-Show presents exhibits by the leaders of industry plus the opportunity to confer with technical and sales experts.

* * *

EARLY BIRDS DINNER

The Conrad Hilton Grand Ball Room

Dinner Promptly at 7:00 P.M.

Monday Morning—May 24

GENERAL CONVENTION SESSION

9:15 A.M.

CALL TO ORDER

Walter Armstrong, *Chairman*, General Convention Committee; *Director of Purchases*, American National Bank and Trust Company of Chicago, Chicago, Illinois.

INVOCATION

Rt. Rev. Monsignor Wm. J. Gorman, *Pastor*, Resurrection Roman Catholic Church, Chicago.

GREETINGS

John F. Ward, *Chairman*, General Program Committee; *Director of Purchases*, The City of Chicago, Chicago, Illinois.

For Chicago Association

Leonard M. Ansley, *President*, Purchasing Agents Association of Chicago; *Purchasing Agent*, Inland Steel Container Co., Chicago, Illinois.

For District No. 3

A. W. Baldock, *Vice President*, District No. 3, N.A.P.A.; *Vice President and Director of Purchases*, Globe Machinery & Supply Company, Des Moines, Iowa.

WELCOME TO CHICAGO

Honorable Martin H. Kennelly, *Mayor* of the City of Chicago.

PRESIDENT'S MESSAGE: Purchasing's Resolution
E. F. Andrews, *President*, National Association of Purchasing Agents; *Director of Purchases*, Pitman-Moore Company, Indianapolis, Indiana.

WHAT DOES OUR BUSINESS SURVEY TELL US?

Robert C. Swanton, *Chairman*, N.A.P.A. Business Survey Committee; *Director of Purchases*,

Winchester Repeating Arms Company, Division of Olin Industries, Inc., New Haven, Conn.

THE SECOND LOOK

H. E. Humphreys, Jr., *President*, United States Rubber Company, New York, N. Y.

* * *

Monday Afternoon—May 24

NATIONAL COMMITTEE ORGANIZATION
MEETING

12:15 P.M.

NATIONAL COMMITTEE ON CONTAINERS
LUNCHEON

* * *

NATIONAL COMMITTEE AND GROUP SESSIONS
12:15 P.M.

EDITORS' GROUP LUNCHEON

* * *

INSULATORS OF ELECTRICAL CONDUCTORS—
BUYERS' GROUP LUNCHEON

* * *

PUBLIC UTILITY BUYERS' GROUP LUNCHEON

* * *

SHIPMAN MEDALISTS LUNCHEON

* * *

LADIES SPECIAL LUNCHEON AND EVENT
South Shore Country Club
12:30 P.M.

GENERAL CONVENTION SESSION

Purchasing's Responsibility in Competitive Markets
2:00 P.M.

Presiding: William T. Reynolds, *Director of Purchases and Stores*, Los Angeles Transit Lines.

RESPONSIBILITY OF PURCHASING . . .

. . . For Sound Purchase-Sales Relations

Lyall C. Stilp, *General Purchasing Agent*, Kimberly-Clark Corporation, Neenah, Wis.

. . . For Public Relations

Nelson J. Gibbins, *Purchasing Agent*, Motor Wheel Corporation, Lansing, Mich.

. . . For Ethics

(Please turn to page 288)



TIRELESS ACTION THANKS TO BATTERY POWER!

Tireless action—that's what your industrial trucks have got to have to keep up with today's materials handling needs. That's what you get when they're powered with new Gould "Thirty" Batteries with Diamond "Z" Grids. Extra reserve, extra performance, extra stamina are built into these batteries to keep your trucks in action all day long. There's no power like battery power—no battery power like *Gould* power.



Specify
THE GOULD "THIRTY"
with New Diamond "Z" Grids—
America's Finest
Industrial Truck Battery

GOULD INDUSTRIAL BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

©1954 Gould-National Batteries, Inc.

For More Information Circle No. 520 on Inquiry Card—Page 17



Frank E. Whyte Elected District 8 Vice President

Frank E. Whyte, manager of purchasing for the Carborundum Co., Niagara Falls, N. Y., was elected vice president for the 8th District of the National Association of Purchasing Agents. He will assume his duties at the National Convention in Chicago. Mr. Whyte began his purchasing career in the purchasing department of the Firestone Rubber Company, Akron, Ohio, and later, the Trans World Airline, Kansas City, Mo. Just prior to joining Carborundum, he was director of purchasing for the Pennsylvania Rubber Company, Jeannette, Pa. He became a member of the Pittsburgh Purchasing Agents Association in 1947 and joined the Buffalo Association in 1949. He was appointed Program Committee chairman in 1950, director and Program Committee chairman in 1951, president in 1952 and national director in 1953.

Purchasing Scholarship Named for George E. Henry

In March, the Metropolitan Purchasers' Assistants Club announced the initiation of a tuition-paid course in purchasing to be called the "George E. Henry Memorial Award" in honor of the late associate editor of PURCHASING. Mr. Henry, who had become so well-known throughout the purchasing profession in his 10 years with PURCHASING, was widely respected for his devotion to the ideals and principles that are the foundation of the profession. The award which will be given to a club member, covers courses in several colleges and universities in the metropolitan New York area. Details are as follows:

Applicants will be judged by the following standards.

1. Attendance
2. Participation in club affairs
3. Necessity for training
4. Data on application
5. Employers recommendations
6. Dues Status

Courses available include the following:

Rutgers University, Newark, N. J.
Industrial Purchasing, Principle & Practice

2 hours—1 evening per week—16 weeks

City College of New York, New York City

Industrial Purchasing Problems

" " Elementary

" " Intermediate

2 hours—1 evening

Columbia University — Grad.

School of Business

Purchasing and Materials Control

Afternoons only 2 to 4 P.M.
New York University — Management Institute
Principles of Purchasing
Wednesday evenings—2 hours
Walter Hervey Jr. College, New York City
Various Purchasing Aspects
6 Graduate Courses—12 weeks.

Rhode Island Group Learns Electrical Industry's Outlook

Fischer Black, editor of the magazine, "Electrical World", was the guest speaker at the March meeting of the Rhode Island Purchasing Agents Association. He spoke on, "Outlook for the Electrical Industry". The association also welcomed into membership Eli C. Adelman, Metalart Co.; Edward W. Bouclin, Durant Tool Supply Co.; John J. Burke, J. L. Marshall & Sons; William S. Moody, Moody Machine Products Co., Inc.; Harry Sidebottom, Bradford Dyeing Association and Kenneth B. Stover, Ward Baking Co.

Washington Ass'n Hears Dean of School of Commerce, Finance

Dr. Paul A. Volpe, dean of the School of Commerce and Finance, Seattle University, was the featured speaker at a recent meeting of the Purchasing Agents Association of Washington. He addressed the group on "Partnership Between Business and Schools of Commerce". He was followed by a showing of the Allegheny Ludlum Steel Company film, "Big Saul".



HISTORY ON VIEW—"Past Presidents' Night" at a recent meeting of the Purchasing Agents Association of Rock River Valley presented a head table of all but one past president. Left to right; C. M. Oberling, W. C. Mackey, J. C. Villa, S. V. Linderoth, J. M. Stewart, H. H. Hoppock, H. S. Drummer, C. C. Erickson, W. L. Young, A. E. Nelson, G. E. Andrews, D. H. Davis, A. R. Middleton. Missing from the affair was E. P. Olson, second president of the association.



"AYES" OF TEXAS—Elected and installed at the March meeting of the Sabine-Neches Association of Purchasing Agents were, left to right; L. A. McNeil, national director; P. H. Doughty, secretary-treasurer; J. W. Wiggins, Jr., second vice president; James F. Swanzy, first vice president; and George Fecel, Jr., president.



Long Distance calls now cost you less

**Recent reduction in federal excise tax means a substantial saving
for you on every Long Distance call**

The reduction in the excise tax from 25% to 10%, voted by Congress, is good news for Long Distance users. It means that every Long Distance call — to anywhere in the country — now costs you less than it did before April 1.

Basic rates remain the same. What you save is the difference between the old and the new tax. Every bit of the tax reduction goes to our customers. The telephone company does not keep any part of it.

Now you can use Long Distance in your business even more profitably than before.

LONG DISTANCE RATES ARE LOW

Some typical examples:

Philadelphia to New York . . .	50¢
Indianapolis to Cincinnati . . .	55¢
Cleveland to Chicago	\$1.00
St. Louis to Baltimore	\$1.50
San Francisco to Washington . .	\$2.50

These are daytime Station-to-Station rates for the first three minutes. They do not include the new, lower federal excise tax of 10%.

BELL TELEPHONE SYSTEM



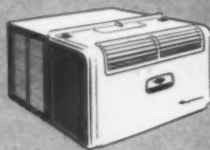
For More Information Circle No. 521 on Inquiry Card—Page 17



**Pressure Type
Water Coolers**



**Self-Contained
Air Conditioners**

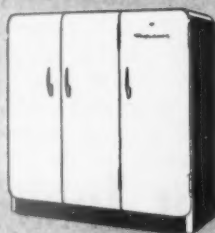


**Room Air
Conditioners**

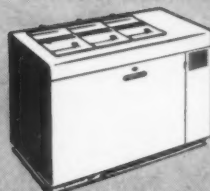


**Compartment
Bottle Type
Water Coolers**

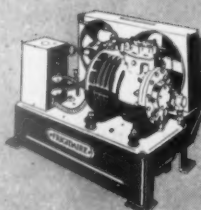
Buy Better... Buy FRIGIDAIRE



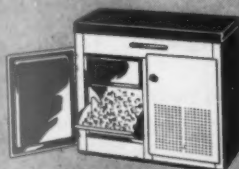
**Reach-In
Refrigerators**



**Low Temperature
Cabinets**



**XD Meter-Miser
Compressors**



**Ice Cube
Makers**

 **FRIGIDAIRE**

Water Coolers

Air Conditioning

Refrigeration

BUILT AND BACKED BY GENERAL MOTORS

For More Information Circle No. 522 on Inquiry Card—Page 17

Gen. Kilpatrick Forum on Inventory Control at N.Y. Ass'n

General John Reed Kilpatrick, president of the Madison Square Garden Association, was the speaker at the evening meeting of the Purchasing Agents Association of New York during March. He outlined some of the unusual and interesting stories on "A Few of the Problems of Sports Promotion". Before the evening affair, Ira G. Fox, manager of materials, Transformer Division, Westinghouse Electric Corp., was guest speaker at a forum meeting. Speaking on "A New Approach to Purchasing's Interest in Inventory Control", he outlined his division's organization in direct respect to planning, procurement, control, flow and overall investment in materials and raw material to finished stock stages.

1 1 1

'Molded Rubber' Color Film

The Acushnet Process Co., New Bedford, Mass., has released a 20-minute, 16mm sound film in color entitled "Molded Rubber". It depicts each operation in the production of precision-molded rubber parts and was filmed in the Acushnet plant. Prints may be obtained by writing to Acushnet for the attention of Karl P. Goodwin, vice president.

1 1 1

Republic Steel Speaker and Film at Canton Meeting

"A Better Life Tomorrow" was the subject of a talk given to the Canton and Eastern Ohio Association of Purchasing Agents by Sidney W. Poole, supervisor of metallurgical development, Republic Steel Corp., in March. In addition, the film "Steel Frontiers" was shown to round out the all-steel program. Two new members, Clovis King, Eynon Plumbing Co. and Lloyd Bower, Sugardale Provision Co. were introduced to the members by Membership Chairman Kelly Arnold.

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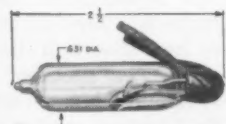
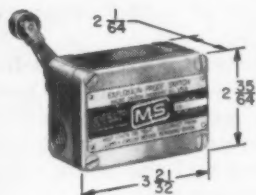
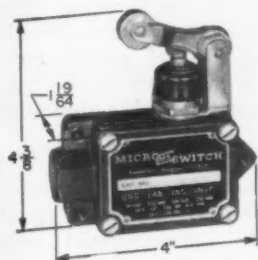
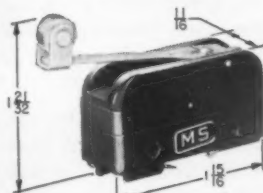
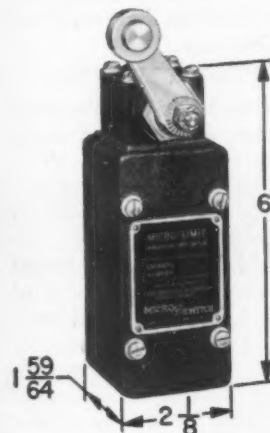
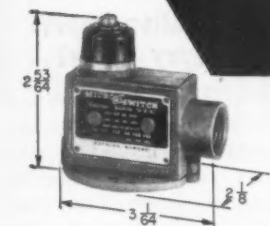
New England Ass'n Hears Renard

George A. Renard, executive secretary-treasurer, N.A.P.A., was the main speaker at a recent meeting of the New England Purchasing Agents Association. His subject was; "From One P.A. to Another". Prior to the evening meeting, a discussion headed by former National Vice President Daniel G. Donovan covered "Material Management".

For More Information Circle No. 523
on Inquiry Card—Page 17→
PURCHASING

MICRO SWITCH Precision Switches

A PRINCIPLE OF GOOD DESIGN



Heavy duty limit switches • Two-circuit limit switches • Sealed limit switches • Die-cast enclosed switches • Sealed die-cast enclosed switches • Hermetically sealed switches • Toggle switches • Subminiature switches • Interlock switches • Push button switches • Mercury switches • High capacity switches • and many other switches and assemblies

BE SURE

when you buy precision switches—
SPECIFY MICRO SWITCH products

● MICRO SWITCH is the sterling stamp of quality in a precision switch. Yet these outstanding switches cost no more in the long run than ordinary switches. That is why thousands of outstanding manufacturers enhance the value of their products by specifying MICRO SWITCH for critical switch components.

*Here's what they look for...
and get...from MICRO SWITCH:*

Extreme Reliability:

MICRO SWITCH quality control of materials and manufacturing methods provides extreme reliability and uniformity of switch performance, whether the order is for a few switches or hundreds of thousands. Each individual switch must meet YOUR master specifications.

Engineering Assistance:

MICRO SWITCH field engineering service has met and solved the switch problems of manufacturers in every field of industry. Their cooperation with you and your engineering staff, entirely without obligation, can save you time and money in securing the exact switch for your application.

New Switch Development:

MICRO SWITCH development engineers, both in the field and at the factory, can develop an entirely new switch for your application—can do it with a minimum of time and expense—if present switches do not meet your requirement.

Buying Convenience:

MICRO SWITCH field engineers are located at 16 branch offices to serve you. They are as close as your telephone. Stocks of MICRO SWITCH products for replacement or installation on plant machinery are in the hands of 176 distributors in 155 key cities.

Economical to Buy:

MICRO SWITCH economy stems from the fact that each MICRO SWITCH product is built to give long and reliable switch life. Their dependability and freedom from maintenance in the field pays for their use many times over. In most cases they provide longer switch life than you will ever need.

*If you require small, precise, light-weight switches,
it is GOOD BUSINESS to specify MICRO SWITCH*

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS



Industrial work gloves



Hand-guards



Which of these can you use?

- Industrial work gloves, hand-guards, safety sleeves and specialties for every industry
- Pads and gloves for bakers
- Press padding for the laundry and dry cleaning plants
- Roller coverings, roller cleaners, rubber rollers for the graphic arts
- Rubber rolls for industry

Write us for complete information on any of these products or Jomac Cloth for other uses.

C. WALKER JONES CO.
DEPT. F., PHILADELPHIA 38, PA.

Plants in
Philadelphia, Pa., and Warsaw, Ind.



Bakers' pads and gloves



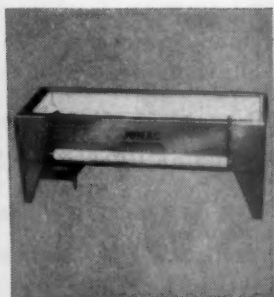
Press padding



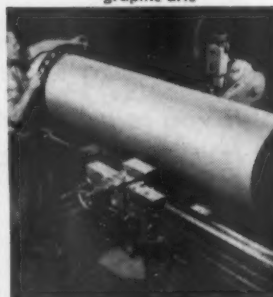
Rubber rollers for the graphic arts



Seamol and Flamol seamless roller coverings



Roller cleaners



Rubber rolls for industry

Chicago Association Issues Business Survey Report

The Business Survey Committee of the Purchasing Agents Association of Chicago has issued a statistical report covering March, 1954. Breaking it down into four main categories with several sub-heads, the committee has analyzed business as follows:

I. VENDOR PERFORMANCE:

A. Deliveries Made by Vendors: Deliveries on required commodities remain fast. This long trend toward faster deliveries is also reflected in the short range buying policy.

B. Price Paid for Principal Items: The slight downward dip of prices which was evidenced beginning with January of this year, slowed this month. For over six months approximately 80% of the members have reported "same" which indicates that prices are still fairly strong and appear to have some stabilization.

II. STATUS OF BUSINESS:

A. Inventories of Principal Items for Production and Resale: Reductions in inventories appear to be going along systematically and are following the patterns of policy indicated by members in the special questions of a previous report.

B. Number of Employees: The reduction of employees continues but with a slowing of the rate as compared with last month. This may be indicative of a better second quarter.

C. Production: While production remains substantially the same as last month, output has been augmented by inventory reductions and the overall factor remains constant.

D. Backlog of Orders for Company Products: The backlog of orders has shown a trend towards a fewer number on hand. It should be remembered that after years of building up production facilities the backlog of order position now reflects these increased capacities.

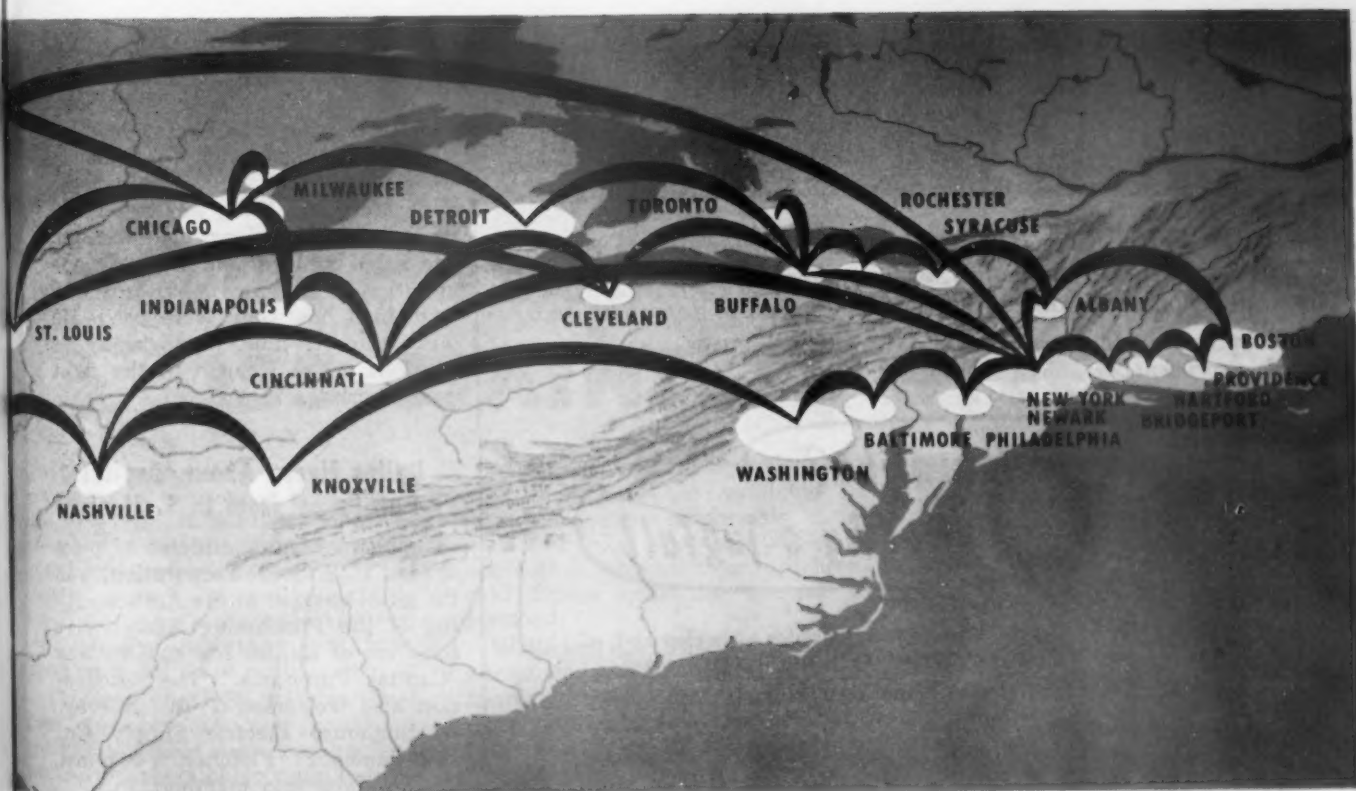
III. BUYING POLICY — How Far in Advance Must You Buy in Order to Have Principal Materials on Hand When Needed: Buying policy continues in the short range and hand-to-mouth category. There has

(Please turn to page 270)

For More Information Circle No. 525 on Inquiry Card—Page 17

at the right **PLACE!**

airfreight field
than any other carrier



experience and handling facilities and you'll readily see why American Airlines is best qualified to handle your shipments, while helping solve your distribution problems. For complete information, write or wire collect to: American Airlines, Cargo Sales Division, 100 Park Avenue, New York 17, New York.

AMERICAN AIRLINES INC.
America's Leading Airline

For More Information Circle No. 527 on Inquiry Card—Page 17

MAY, 1954

**YOU
CAN
CUT
YOUR
LABOR
COSTS**



Use Bemis Tite-Fit Tubing!

Bemis Tite-Fit Tubing . . . the spiral-sewn burlap tubing with the 2-way stretch . . . is the fastest, easiest, most economical wrapping for rolls or bales of goods. Ask the Bemis Man to demonstrate.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

*All burlap alike?
Not by a jugful!*



There are various grades of burlap and, of course, variations within those grades.

But there's one sure way to get the quality of burlap you pay for: *Rely on Bemis.**

You can always look to Bemis for the best in burlap!

*Producers and users alike accept Bemis' grading of Indian burlap as the standard for the industry.

Bemis



General Offices
St. Louis 2, Mo.

For More Information Circle No. 528 on Inquiry Card—Page 17

(Continued from page 260)

been a slight shifting from the 30 to 60-day buying bracket into the 0 to 30-day category.

IV. BUSINESS CONDITIONS.

A. **Standpoint of Volume:** Business conditions from the standpoint of volume have not changed materially over last month. At the beginning of the quarter, however, there were indications of optimism that have not developed as rapidly as expected.

B. **Standpoint of Profit:** This month's report on profits is less favorable than last month's. Profits show little change over last month and are closely allied with the volume position.

1 1 1

Police Lab Work Outlined at Denver P.A.'s Meeting

Police work has changed in recent years with laboratory procedures covering crime factors previously ignored, according to Lt. James F. Shumate of the Denver Police Department's Crime Laboratory. Speaking at a recent meeting of the Purchasing Agents Association of Denver, Lt. Shumate pointed out that there are many mute evidences at the scene of a crime that the laboratory can bring out to convict the guilty and clear the innocent. He listed some of the scientific apparatus in the police laboratory and explained how they were used. He also showed how photography is used as police weapon in the fight against crime.

1 1 1

Dallas Hears About 'Capital Purchases' from U. S. Steel

Ralph C. Moffitt, director of purchases, U. S. Steel Corporation, was the guest speaker at the April meeting of the Purchasing Agents Association of Dallas. His subject was "Capital Purchases." The association also welcomed T. W. Harvey, Westinghouse Electric Supply Co. and James S. Fletcher, Foremost Dairies, Inc., into membership.

1 1 1

Executive's Night in Pittsburgh

The annual "Executive's Night" was celebrated by the Purchasing Agents Association of Pittsburgh at its March meeting. George A. Renard, executive secretary-treasurer, N.A.P.A., spoke on "From One P.A. to Another"

For More Information Circle No. 529
on Inquiry Card—Page 17→
PURCHASING

For the widest selection of

sizes,
shapes
and
grades



... specify bar stock of **USS STAINLESS STEEL**

United States Steel's bar mills are equipped to produce USS Stainless Steel bars in the most complete range of sizes, shapes and grades available anywhere today. This means you can get exactly what you need from a single convenient source, but, equally important, you have freedom of design as well.

By employing USS Stainless Steel bars in shapes, sizes and grades not readily available elsewhere, you can make your product stronger, lighter, more efficient or more attractive—and often at lower cost.

All sizes and grades of USS Stainless Steel bars are available in rounds, squares, hexagonals, octagons and flats. They are furnished hot rolled, annealed and pickled, cold drawn, centerless ground or polished.

When you use USS Stainless Steel bar stock you can count on uniformity in properties, finishes and dimensions—the result of stringent control at every step through production. USS Stainless Steel bars are made better to make your products better.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

*On-the-spot
service*

**on USS Stainless
Steel bar stock**

For prompt service on immediate requirements, call your Stainless Steel warehouse distributor today. He can offer you unbeatable delivery on USS Stainless Steel.



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UNITED STATES STEEL



Impossible?

The impossible is obvious . . . but perhaps you are missing some of the many possible TOWMOTOR applications around your plant. Besides receiving, warehousing, and shipping, TOWMOTORS can also save time, labor, and money on maintenance jobs. Lifting workmen to high walls and ceilings. Moving heavy machinery when and where needed most. With dozens of special attachments, TOWMOTORS speed production—change unwieldy dies, shake out annealed castings, pour chemicals into vats . . . handle every conceivable shape and material! Let us show you how much *more* TOWMOTOR can do and save for you . . . send for "Towmotor Portfolio for Executives." TOWMOTOR CORPORATION, Div. 1105, 1226 East 152nd St., Cleveland 10, Ohio.



FORK LIFT TRUCKS and TRACTORS
Since 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE
For More Information Circle No. 530 on Inquiry Card—Page 17

Convention 'Social' for Women Purchasing Agents On May 24

The Women's Division of the Chicago Association has arranged a "Hospitality Dinner" to welcome all women purchasing agents attending the N.A.P.A. Convention in Chicago. It will be held at the Drake Hotel at 7 p.m. on Monday, May 24th. Aimed as strictly a social event, the dinner will be a means of relaxation and fun for the lady P.A.'s. Reservations should be sent to Miss Helen Hoffman, c/o Chicago Motor Club, 66 E. South Water St., Chicago 1.

1 1 1

MPAC Holds Forum, Hears Speaker on 'Buying of Forms'

The Metropolitan Purchasers' Assistants Club of New York had a "double-barrelled" meeting in April. G. Fordyce, assistant to the director of purchases, American Cyanamid Co., held a "pre-meeting" forum on "Purchasing Management". Later, the group heard W. Sadauskas of Union Carbide & Carbon Co., outline his company's procedure in "Buying Of Forms".

1 1 1

Dean of Women's College at New Orleans Ass'n Meeting

"Buyers-Sellers Night" was the theme of the March meeting of the Purchasing Agents Association of New Orleans. Speaker for the evening was Dr. V. L. Wharton, dean of the Texas State College for Women, whose topic was "Population Trends".

1 1 1

John Hill Speaks at Montreal

John A. Hill, president and director of Air Reduction Co., Inc., was the guest speaker at a recent meeting of the Purchasing Agents Association of Montreal. Mr. Hill spoke on "The Purchasing Revolution".

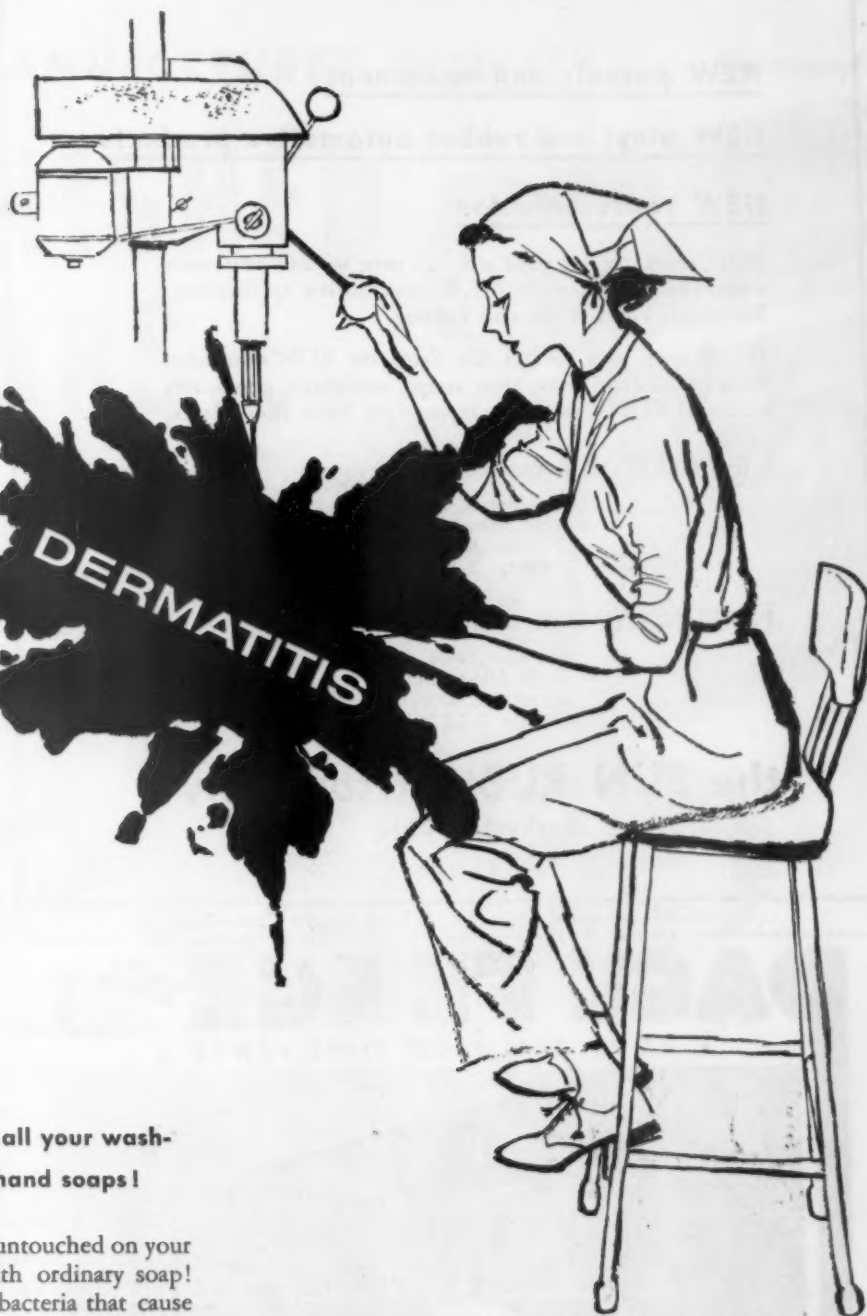
1 1 1

Speaker Prepares B.C. P.A.'s for Visit to Research Council

"Industrial Research and Its Effect on Purchasing" was the topic of the main address of a recent meeting of the Purchasing Agents Association of British Columbia. Delivered by H. A. Breeze, head of the physics department of the B. C. Research Council, it served to whet the appetite for a visit by the members to the council's facilities at the University of British Columbia.

For More Information Circle No. 531
on Inquiry Card—Page 17→
PURCHASING

protect against
DERMATITIS



Put Hexachlorophene protection in all your wash-rooms with Armour's antiseptic hand soaps!

The cause of many skin infections is left untouched on your hands *after* you have washed them with ordinary soap! Ordinary soap will *not* destroy the skin bacteria that cause infection and dermatitis. But because Armour's antiseptic hand soaps contain Hexachlorophene, they *will* destroy harmful skin bacteria.

Hexachlorophene is the first germicidal agent ever found that stays antiseptic in soap. Daily washing with these Armour soaps containing Hexachlorophene will destroy *up to 95%* of harmful skin bacteria! That's real protection for the people in your company and may add benefits in insurance and labor relations, too.

So order Liquid Dial or powdered Formula #99 for your washrooms today! (You can order the powder form with either Borax or a vegetable scrubber added.) Request the samples and booklet offered at right and see for yourself how Hexachlorophene soap protects against dermatitis!

ARMOUR

Industrial Soap Department

Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

For More Information Circle No. 532 on Inquiry Card—Page 17

MAY, 1954

Mail this coupon today

Armour and Company • 1355 W. 31st St. • Chicago 9, Ill.

Please send me a free sample of:

- ☐ Formula #99 Powdered (with Borax, containing Hexachlorophene)
- ☐ Formula #99 Powdered (with vegetable scrubber, containing Hexachlorophene)
- ☐ Liquid Dial (containing Hexachlorophene)
- ☐ Booklet, "Formula #99 Antiseptic Hand Soaps for Industry"

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Firm _____

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City _____ Zone _____ State _____

P-5

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NEW representation

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It will pay you to get the facts on SUN's molded trim pads, arm rests, trim strips, snubbers, grommets . . . and SUN's new representatives have these facts.

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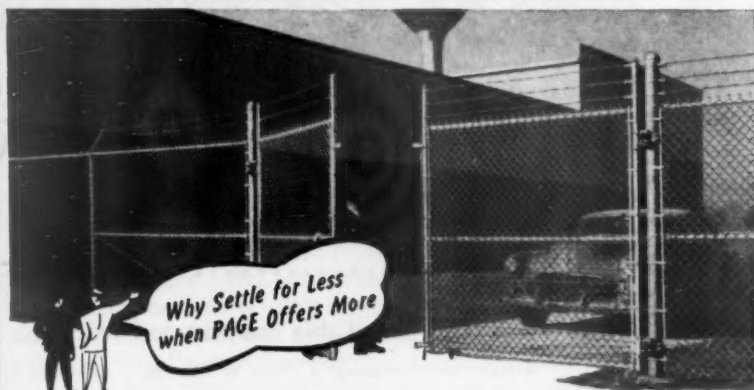
the SUN RUBBER company

Barberton, Ohio

For More Information Circle No. 533 on Inquiry Card—Page 17

PAGE FENCE *-Since 1883*

• AMERICA'S FIRST WIRE FENCE •



• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you...

Write to PAGE FENCE ASSOCIATION, Monessen, Pa., or look in Thomas' Register for listing of Page Chain Link Fence Distributors under "PAGE STEEL AND WIRE DIVISION," or see MacRae's Blue Book for listing under "FENCING, WIRE, LINK," or consult Sweet's Industrial Construction File. PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

For More Information Circle No. 534 on Inquiry Card—Page 17

New Castle Ass'n Joins Traffic Club for Combined Meeting

The Purchasing Agents Association of New Castle skipped their regular March meeting for a joint meeting with the Lawrence County Traffic Club of Pennsylvania. 102 members and guests of both groups heard Fred Bennett, general traffic manager, Sharon Steel Corporation speak on "Traffic Problems Ahead". Mr. Bennett stressed the necessity of cooperation among industry, shippers and carriers in order to keep transportation on an even keel. He also reviewed various state taxes, such as ton mile taxes and axle mile taxes which, in his opinion, are trade barriers preventing the even flow of commerce.

1 1 1

E. F. Andrews Talks in Chicago

E. F. Andrews, president of the N.A.P.A., was the guest speaker at the April meeting of the Purchasing Agents Association of Chicago. Mr. Andrews was introduced to the group by A. W. Baldock, vice president of District 3, N.A.P.A.

1 1 1

Dun & Bradstreet Sound Film

"Of Time and Salesmen" is a new 16mm sound film put out by Dun & Bradstreet dealing with selling and sales planning. It is basically a sales training film and runs for 32 minutes. It can be borrowed by contacting Dun & Bradstreet's Public Relations Department, 99 Church St., New York 8, N. Y.

1 1 1

Joint Meeting, Products Exhibit Score for Dayton in March-April

The joint meeting of the Purchasing Agents Association of Dayton and the Production Control Managers Association, held in March, was highlighted by an address by John D. O'Brien, general manager of the Inland Mfg. Co. He spoke on the subject "What the General Manager Expects of Purchasing and Production Control". During April, the association held its third annual "Member's Products Exhibit" which brought more than 300 members and guests to Dayton's Biltmore Hotel for the show and dinner. The affair was distinguished by the presence of George A. Renard, executive secretary-treasurer of N.A.P.A., and W. R. Lantz, vice president of District 6, N.A.P.A.

La Salle MANUFACTURES QUALITY

COLD FINISHED STEEL BARS . . .



**AMERICA'S
MOST COMPLETE LINE!**

ROUNDS, FLATS, SQUARES, HEXAGONS, SPECIAL SHAPES

LaSalle offers a complete range of cold-finished steel bars in popular sizes, shapes, and lengths. Also, special shapes to order.

COLD-DRAWN—TURNED AND POLISHED —GROUND AND POLISHED

Modern drawing, turning, and grinding equipment, and skilled workmanship insure quality steel bars in standard grades.

CARBON AND ALLOY STEELS LaSalle manufactures quality cold-finished bars in AISI and SAE carbon and alloy steel grades.

FREE-MACHINING STEELS LaSalle specializes in free-machining steels for economical production of your parts . . . Bessemer, open-hearth, and several types of leaded steels.

FURNACE-TREATED STEELS LaSalle's furnace treatment develops elevated physical properties through quenching and tempering, and stress relieving. Careful annealing improves machinability.

SPECIAL STEELS Aggressive engineering research makes LaSalle a leader in specialty steels . . . with such developments as STRESSPROOF, LA-LED, and Super LA-LED.

Send for "The Story of Cold-Finished
Steel Bars . . . from Ore to Finished Product"



LA SALLE STEEL COMPANY
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Steel Bars . . . from Ore to Finished Product"

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Title _____
Company _____
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City _____ Zone _____ State _____



La Salle **STEEL CO.**

Manufacturers of the Most Complete
Line of Carbon and Alloy Cold-Finished
and Ground and Polished Steel Bars in America.

For More Information Circle No. 537 on Inquiry Card—Page 17

MAY, 1954

281



CHASE PROTEX BAGS—TOPMILL burlap or cotton... laminated to crinkled kraft with waterproof adhesive. With or without dry-seal closure.



CHASE RED TIE DRAWSTRING BAGS—Wide variety of sizes and shapes. Made of quality cotton rayon or nylon for mailing and storage of parts and samples or new products.

CHASE CRINKLED OR CRINKLED AND PLEATED LINERS—Waxed or unwaxed protective liners for bags, barrels, boxes and drums. Sizes to meet every requirement.



CHASE SHARKRAFT BAGS—Every-ply crinkled Multiwall Bag that provides elasticity to resist rough usage. Available in 2 to 5 plies.



CHASE BARREL COVERS AND DRUM HEADERS—Neoprene treated kraft paper or waterproof Protex—CHASE makes both kinds for all commercial uses.



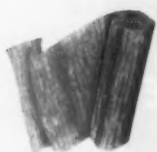
CHASE MULTIWALL PAPER BAGS—Available in 2 to 5 plies for every industrial use. A low cost, fast filling, safe shipping bag.

Rely On CHASE Bags ...Rely On Your "C"-Man

Want a packaging expert on your staff but not on your payroll? Call your "C"-Man, your capable Chase Bag representative backed by 107 years of know how. Chase packaging products are made from quality material—sharply and clearly imprinted. You can't put your product in better bags... you can't put your problems in more capable hands.

Call your nearest Chase Representative for samples and current prices.

WRITE DEPARTMENT 29-E



CHASE PROTECTIVE PAPERS—CHASE DUPLEX, smooth or crinkled, laminated kraft in rolls, sheets, or die-cut for every industrial use.



CHASE POLYTEX PLASTIC BAGS AND LINERS—Clear, odorless, moisture-proof Polyethylene. Non-toxic and air-tight. Available with or without printing.



CHASE TWINES—CHASE offers a complete line of twine and thread for all commercial uses.

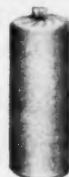


CHASE SAXOLIN OPEN-MESH BAGS—Available in various sizes and colors. For all produce and citrus. Provides visibility and good ventilation.



CHASE COTTON BAGS—Available in various sizes. Made from finest sheetings, print cloths and osnaburgs.

CHASE REDI-RAFT TUBING—Bias sewn burlap or cotton tubing with two-way stretch for wrapping all hard to wrap items. One size fits several packaging circumferences.



CHASE BURLAP BAGS—CHASE TOPMILL burlap bags are famous for strength, uniformity and good looks. Made of India Jute.



CHASE PARASAX BAGS—"Parasax" provides an ideal bag for food products, chemicals and many other products that require complete protection from the elements.



CHASE BAG COMPANY

General Sales Offices: 309 W. Jackson Blvd., Chicago 6, Illinois
30 BRANCHES AND SALES OFFICES...STRATEGICALLY LOCATED
For More Information Circle No. 538 on Inquiry Card—Page 17

Forum Ford Speaker Highlight Buffalo Association's Meeting

The Purchasing Agents Association of Buffalo had a "double feature" program for their March meeting. Preceding the regular meeting, the Educational Committee presented a forum on "Finding Time for Improved Buying". Charlie Parezo covered the subjects of systems, standardization, expediting by vendors and advance buying as used in the Buffalo purchasing operations of the Westinghouse Corporation. The regular meeting featured John C. Hall, supervisor of Standards, Administrative Section, Manufacturing-Engineering Division, Ford Motor Co. He spoke on "Standardization" as handled by the Ford Motor Co. Later, Harold Chapin, Chapin & Fagin, Inc.; Dale M. Detar, Allegheny Ludlum Steel Corp.; Martin J. Murrett, Ryan & Williams, Inc. and Leonard S. Kaminker, Buffalo Sash Weight & Foundry Co. were voted into membership.

1 1 1

Purchasing Students Join Twin City P.A.'s to Hear J. L. Hamilton

A pre-meeting huddle to discuss "Value Analysis" started activities for the March meeting of the Twin City Association of Purchasing Agents. J. L. Hamilton, Jr., vice president in charge of sales, Granite City Steel Co., was the feature speaker for the evening and addressed the group on "A Steel Mill Takes to the River". Distributed throughout the assemblage were 25 students from the University of Minnesota Business School, who had just completed their course in "Purchasing".

1 1 1

South Bend "Bosses' Night"

The South Bend Purchasing Agents Association held a "Bosses' Night" at a recent meeting of the association. E. F. Andrews, president of N.A.P.A., was the main speaker and talked on "The Place of Purchasing in Management". L. G. Wisely, vice president of District 4, N.A.P.A., was a guest of the association for the evening.

1 1 1

Sound-Slide Film

"No Margin for Error", a new sound-slide film—in full color—containing the answers to lubrication problems, has been released by Alemite, a division of Stewart Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.

For More Information Circle No. 539
on Inquiry Card—Page 17→
PURCHASING

HERE'S PROOF: You can always count on Continental for every fastener need!

Phillips "Bits—Holders—Screws" are Exclusive with Continental!

... they can cut your production costs

Continental is the only manufacturer producing this outstanding Phillips fastening combination—bits, holders, and screws. Their development has finally made power driving really practical, even on finished parts.

They have cut fastening costs as much as 50% and Continental's HY-PRO-Phillips bits average 2 to 4 times longer life than any other . . . one actually drove over 1,000,000 screws. Yes, it's another Continental exclusive in an outstanding record of 50 years in business.

Put your fastening needs in experienced hands. Call direct today or contact your local distributor. Continental can help cut your production costs.



Manufacturers of **HOLTITE** Fastenings



50th Anniversary

CONTINENTAL SCREW COMPANY

New Bedford, Mass., U. S. A.

Bay State Diamond Wheels



...for ANY "ENGAGEMENT"!

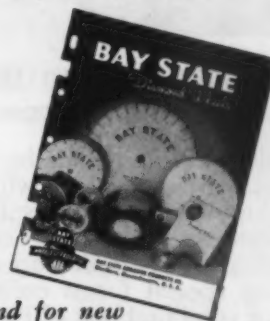


Engagements, diamonds, and life-time bonds have long been partners. So have BAY STATE, and "Grinding Wheel Progress".

The latest sparkling development is BAY STATE'S new Vitrified bond which holds *every* diamond particle until the last bit of its cutting ability is used.

Results: More uniform cutting rates, greater efficiency per unit of abrasive, still longer wheel-life, and . . . more grinding wheel progress by BAY STATE!

Besides this progressive step in bonds, we have ample stocks of diamond bort, and outstanding abrasive engineering service. Together, these make BAY STATE a most reliable source of all your diamond wheel needs . . . in all bonds; vitrified, metal, or resinoid.



Send for new
Diamond Wheel Handbook
which includes net prices.

Manufacturers of all types of Quality Abrasive Products

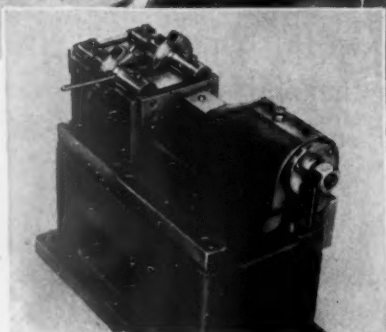
BAY STATE ABRASIVE PRODUCTS CO., Westboro, Mass., U. S. A.

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Distributors — All principal cities

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For More Information Circle No. 540 on Inquiry Card—Page 17

A Specialist is Your Best Bet



These SPECIAL FORMED WHEEL DRESSERS and a watch have one thing in common.

Both are designed and made by specialists. Vinco will design and build special dressers which will dress wheels to grind involute, serration and straight sided splines, as well as helical and spur gears. These same dressers can be set up to grind the tooth flank, fillet and root in one operation. Dressers can be designed for dressing special forms consisting of angles, radii, a series of either or combinations of both. When formed wheel dressers are needed, your best bet is Vinco.

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Metal Component Parts Mass Produced • Aircraft and Commercial Gears • Model B-1 Dresser • Precisiondex • Spline Gages Master Gears • Gear Rolling Inspection Fixtures • Camshaft Comparators • Optical Master Inspection Dividing Heads • Involute Checker. ®

VINCO

MILLIONTHS OF AN
INCH FOR SALE

TRADEMARK OF DEPENDABILITY

For More Information Circle No. 541 on Inquiry Card—Page 17

Cleveland P.A.'s, Engineers See TV Transmission Story

A joint meeting with the Cleveland Engineering Society was the main activity of the Purchasing Agents Association of Cleveland during March. The group had a lecture-demonstration on television transmission by Robert C. Clark, public relations supervisor, Ohio Bell Telephone Co. In explaining and demonstrating the principles of radar and the use of micro-waves in transmitting TV pictures, Mr. Clark used special apparatus to show how micro-waves can be bent, reflected, made to go around corners and concentrated into narrow beams. He also described the Bell System's coaxial cable network, now being installed across the country, which augments the radio relay system now carrying TV and telephone messages.

1 1 1

U.S. Plywood Sound Picture

The United States Plywood Corporation has released a 16mm, full color, sound movie entitled "Seeing Is Believing". It is a humorous account of the story of wood used for home decoration from the Renaissance to the present. It can be obtained by contacting Movies U.S.A., Inc., 729 Seventh Ave., New York 19, N. Y.

1 1 1

Machine Tool Movie

A film illustrating the highlights in the operations of a multiple-line precision machine tool and small tool builder, has been released by Brown & Sharpe Mfg. Co. Entitled "Meet Brown & Sharpe", the 16mm sound and color film can be obtained from any Brown & Sharpe offices or from the main office and plant in Providence, Rhode Island.

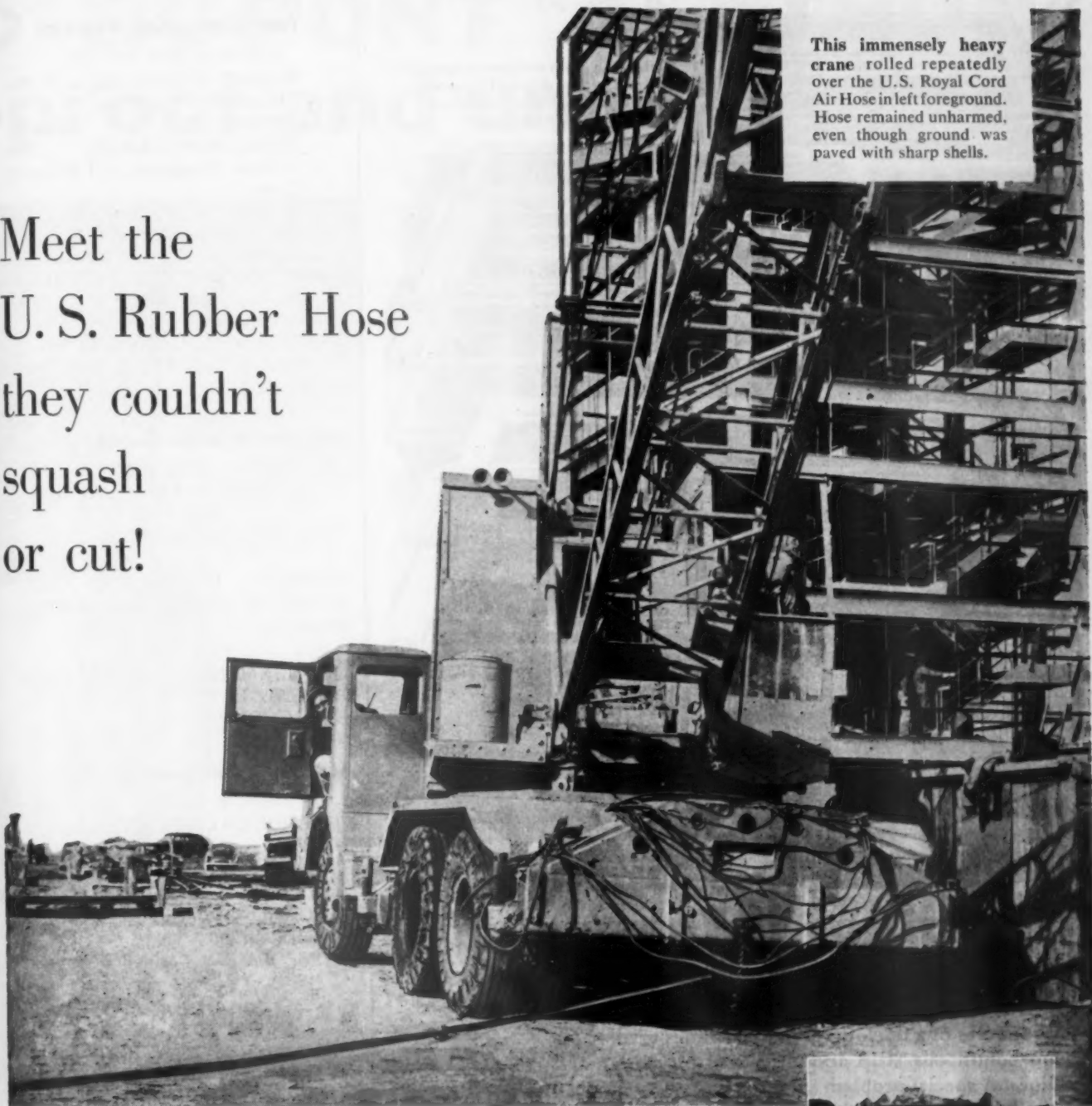
1 1 1

Movie on Acoustical Material

A 20-minute sound movie, in color, entitled "How to Select an Acoustical Material" formed the background for an address by W. H. Roath, sales engineer, Armstrong Cork Co., at a recent meeting of the Purchasing Agents Association of Dallas. In addition, four new members were welcomed into the association. They are; B. F. Little, Southland Supply Co.; Robert T. Hobkirk, George A. Hormel & Co.; Frank E. Swain, Southern Tube Co. and Leonard Meritz, Liberty Plating & Processing Co.

Meet the U. S. Rubber Hose they couldn't squash or cut!

This immensely heavy crane rolled repeatedly over the U. S. Royal Cord Air Hose in left foreground. Hose remained unharmed, even though ground was paved with sharp shells.



Constant stream of heavily loaded vehicles at considerable speed roll over the U. S. Royal Cord Air Hose on hard packed roadway. Hose suffered no damage.

In the 14 months it took to build a large aluminum plant in Texas, U. S. Royal Cord Air Hose took a beating which amazed construction men. 50-ton cranes on tractors, trucks carrying steel girders or gravel, ran over it again and again. *No cribbing was used.* The pavement was surfaced with very sharp and abrasive oyster and clam shells. Yet the hose suffered no damage, not even when carrying 125 pounds of water closed off at the end! Weathering and salt air had no effect on it. What's more,

every foot of the hose is now being used in the finished plant.

If there ever was a hose you can thoroughly abuse, U. S. Royal Cord is it. You don't have to waste time and money cribbing it. Move it about at will. It's the only cord hose built with true tire construction.

This is the sort of endurance you can count on in any United States Rubber Company product. There are 25 "U.S." District Sales Offices, staffed with engineers to serve you. Or write to address below.

U.S. RUBBER
SERVING THROUGH SCIENCE

"U.S." Research perfects it. "U.S." Production builds it. U. S. Industry depends on it.

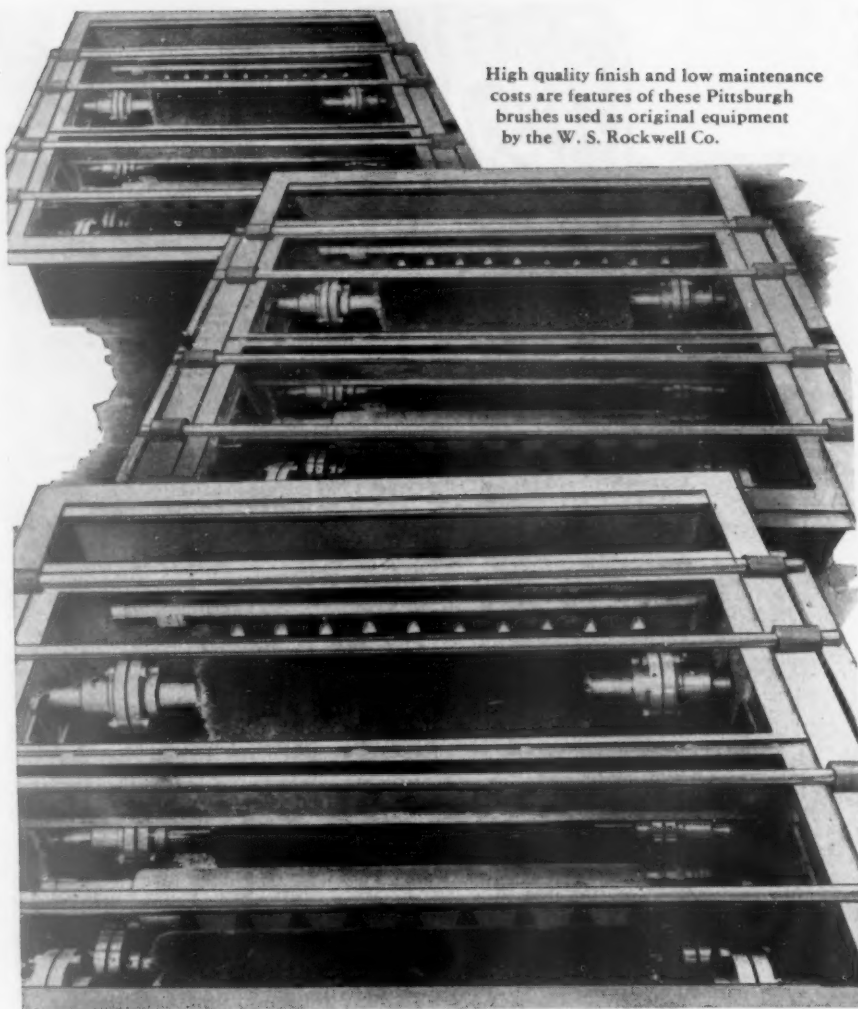
UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

For More Information Circle No. 542 on Inquiry Card—Page 17

MAY, 1954

287



High quality finish and low maintenance costs are features of these Pittsburgh brushes used as original equipment by the W. S. Rockwell Co.

Want to Improve Original Equipment?

Here's the experience of one firm that did, the W. S. Rockwell Company, Fairfield, Conn., producers of a line of cleaning machines used on continuous strip annealing and pickling lines. A special problem existed in connection with these machines since the cold water rinse employed had a corrosive effect on most wire brushes.

Pittsburgh recommended four stainless steel wire brushes . . . operating in a stainless steel tank. The brushes proved to be the answer—providing fast, economical performance while resisting corrosion.



WRITE TODAY for your free copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing costs. Address: Pittsburgh Plate Glass Co., Brush Div., Dept. W-2, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH

**Power Driven
BRUSHES**



BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

For More Information Circle No. 543 on Inquiry Card—Page 17

Your Convention Program

(Continued from page 258)

Stuart F. Heinritz, *Editor, PURCHASING*, New York, N. Y.
RESPONSIBILITY OF INDUSTRIAL PURCHASING . . . For Defense Programs and Military Costs
General E. W. Rawlings, U.S. A.F. Commander, Air Materiel Command, Dayton, Ohio.
RESPONSIBILITY OF PURCHASING . . . For Illegal Price Discrimination
Andrew J. Graham, *Attorney*, Rogers, Hoge & Hills, New York, N. Y.

* * *

Monday Afternoon—May 24

NATIONAL COMMITTEE AND GROUP SESSIONS

2:00 P.M.

FORUM: CONTAINERS

* * *

BANKING, INSURANCE, AND GENERAL OFFICE—BUYERS' GROUP

* * *

GOVERNMENTAL, EDUCATIONAL AND INSTITUTIONAL BUYERS' GROUP

* * *

Monday Evening—May 24

6:15 P.M.

HENDRICKS CLUB ANNUAL DINNER

* * *

6:30 P.M.

CHICAGO WOMEN'S DIVISION DINNER

(For N.A.P.A. Women Members)

* * *

7:30-9:00 P.M.

INDUSTRIAL FILM PRESENTATION

* * *

INFORM-A-SHOW

Open Monday Evening until 9:00 P.M.

* * *

Tuesday Morning—May 25

NATIONAL DIRECTORS' MEETING

8:00 A.M. (Not a breakfast meeting)

Presiding: E. F. Andrews, *President*, National Association of Purchasing Agents; *Director of Purchases*, Pitman-Moore Company, Indianapolis, Indiana.

National President's Report on Activities and Developments of the Year

E. F. Andrews, *President*, N.A.P.A.

Introduction of 1954-1955 N.A.P.A. President

(Please turn to page 292)

of DU PONT "ALATHON" -proof and unbreakable



Outstanding properties of Du Pont plastic engineering material improve product performance . . . add sales appeal

Flashlight case manufacturers face difficult problems. To be fully serviceable, a case must be light in weight yet strong. It must be attractive in appearance and "warm" to the touch. It must resist moisture and corrosive chemicals . . . have good dielectric properties. And, of course, it must be capable of mass production at low cost.

One manufacturer met *all* these requirements—and added new sales appeal to his product—by specifying a flashlight case molded of Du Pont "Alathon" polyethylene resin. "Alathon," for example, is strong, yet extremely light in weight, and can be processed in a variety of colors. The toughness and resiliency of this unique engineering material enable the case to withstand heavy blows without denting or breaking. Problems of damage from water and corrosion are eliminated with "Alathon," since the material is moisture-resistant and inert to most chemicals. And, because the three basic parts making up the flashlight case are produced by economical injection molding, complicated sub-assembly steps are eliminated . . . production costs are low!

HAVE YOU AND YOUR COMPANY INVESTIGATED THE PROPERTIES of Du Pont "Alathon" polyethylene resin and the other members of the Du Pont family of plastic engineering materials—"Lucite" acrylic resin, "Teflon" tetrafluoroethylene resin and Du Pont nylon? The application described above and the others shown on these pages are typical of the product improvements made possible when design and service requirements are evaluated in terms of these unique engineering materials. For further information on the properties and uses of these materials, use the coupon below or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 334A Du Pont Building., Wilmington 98, Delaware.



REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

*Trademark of E. I. du Pont de Nemours & Co. (Inc.)

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 334A, Du Pont Building., Wilmington 98, Delaware.

Please send me more information on the Du Pont plastic engineering materials checked: ☐ Du Pont nylon; ☐ "Alathon" polyethylene resin; ☐ "Teflon" tetrafluoroethylene resin; ☐ "Lucite" acrylic resin. I am interested in evaluating these materials for:

Name _____

Position _____

Firm Name _____

Street Address _____

City _____

State _____

Type of Business _____

For More Information Circle No. 545 on Inquiry Card—Page 17

MAY, 1954

291



**"THIS LUBRICANT
INCREASED
BEARING LIFE
FROM 2 WEEKS
TO 2 YEARS"**

—says THE GLOBE COMPANY

"Animal acids and moisture, most harmful to ball and roller bearings prevails in the entire meat packing industry. With conventional lubricants, some of the bearings in our Roto-Cut machines did not last two weeks. Since using Ball Bearing LUBRIPLATE in machines operating continuously 24 hours a day for over two years, we have not had a single bearing replacement."

**REGARDLESS OF THE SIZE AND
TYPE OF YOUR MACHINERY,
LUBRIPLATE GREASE AND
FLUID TYPE LUBRICANTS WILL
IMPROVE ITS OPERATION AND
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



For More Information Circle No. 546
on Inquiry Card—Page 17

(Continued from page 288)

The new president will outline his policy and program.

* * *

Tuesday Morning—May 25

GENERAL CONVENTION SESSION 9:00 A.M.

Presiding: Robert L. Krueger,
Purchasing Agent, Goodman
Manufacturing Company, Chi-
cago, Illinois.

OUR ECONOMIC PROBLEMS

A Panel Discussion by Leading
Economists:

Moderator: H. E. Luedicke,
Editor and Economist, Journal
of Commerce, New York, N. Y.
Martin R. Gainsbrugh, Chief
Economist and Director, Divi-
sion of Business Economics, Na-
tional Industrial Conference
Board, Inc., New York, N. Y.
Ernest T. Baughman, Assistant
Vice President and Economist,
Federal Reserve Bank of Chi-
cago, Illinois.

G. A. Renard, Executive Secre-
tary-Treasurer, National Asso-
ciation of Purchasing Agents,
New York, N. Y.

* * *

Panel Discussion Meetings

Starting at 10:30 A.M. in separate
rooms.

There are three; take your choice.
PAPER PANEL DISCUSSION

* * *

STANDARDIZATION PANEL DISCUSSION

* * *

STEEL PANEL DISCUSSION

* * *

Tuesday—May 25

OFFICIAL MEETINGS

1:30 P.M.

CREDENTIALS COMMITTEE CONVENTION ATTENDANCE CUP COMMITTEE

3:00 P.M.

RESOLUTIONS COMMITTEE

* * *

Tuesday Morning—May 25

NATIONAL GROUP MEETING

10:30 A.M.

FINE CHEMICALS GROUP—An Organization Meeting

* * *

Tuesday Afternoon—May 25

NATIONAL COMMITTEE ORGANIZATION MEETINGS

12:15 P.M.

NATIONAL COMMITTEE ON COAL

NATIONAL COMMITTEE ON

(Please turn to page 298)



**"THIS LUBRICANT
SAVED US
\$2,098.16
IN SEVEN MONTHS"**

—says THE BROWN COMPANY
Quality Paper Makers of Berlin, N. H.

"During a seven-month period before using LUBRIPLATE No. 130-AA in the bearing of our Kraft Mill Lime Kiln, we used a conventional oil at a cost of \$2,134.00. In the seven months that followed, we used LUBRIPLATE No. 130-AA for initial filling and replacement at the cost of \$35.84."

**REGARDLESS OF THE SIZE AND
TYPE OF YOUR MACHINERY,
LUBRIPLATE GREASE AND
FLUID TYPE LUBRICANTS WILL
IMPROVE ITS OPERATION AND
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



AUTOMATIC DRIVING adds *extra* speed to the faster P-K Fastening Method. Here, an automatic, double-spindle, hopper-fed machine is being used for driving two P-K Type U Drive Screws simultaneously in a plastic electric outlet. Single or multiple spindle machines are available from several manufacturers.



MAYTAG ASSEMBLY MOVES FASTER because fastenings made with P-K Self-tapping Screws are simpler, easier, dependably secure. In the Maytag Dryer shown, 80 Type A and 46 Hex Head Type Z are used, in all, for fastening sheets from 24 to 11 gage — driven with air-operated tools.



with P-K quality—planned assembly savings pay off



EVINRUDE RELIES ON PROVED STRENGTH of P-K Self-tapping Screws for this critical fastening in an outboard motor sub-assembly, where lasting security is vital. A P-K Binding Head Type F is driven through a die-cast aluminum drive housing and acts as a retainer for the stamped aluminum exhaust baffle.



TELEREX GETS CLEAR PICTURE of performance. For this "Hi-V" Reflector, Telerex, Inc., needed proved resistance to high tension and vibration. They specified 17 slotted Hex Head Z, reasoning soundly that P-K, the *originator*, knows best how to put uniform hardness and toughness in *every* screw.

The Original

SELF-TAPPING SCREWS



your local Supply and Service Specialist



we make parts like these...

... in large or small lots, from all types of stainless steels and other heat- and corrosion-resistant materials. Unusually extensive secondary operation equipment, inspection and quality control facilities, and experimental and research techniques insure highest quality work. Capacities from 1/32" to 3 1/2" round on bar machines—up to 8" round on chuckers.



Bolts of this type, in aircraft quality, are produced in large volume. Blanks are made on multiple spindle New Britains and parts are then processed through heat treating, form grinding, roll knurling and roll threading.

Interesting features of this bolt are the hardness of Rockwell 35-38, concentricity requirement of .001 T.I.R. and squareness requirements of .002 T.I.R. between surface under head and body diameters and an exact number of 46 teeth in the knurl.

This part is blanked on a multiple spindle machine, using 3 1/2" diameter tubing AMS 5645. Part is plunge ground on the body diameter and an additional forming is performed on a turret lathe. The entire internal form including all three internal diameters, tapered seat, radii, front and back chamfer are single point bored on a Model 36 New Britain contour boring machine. This is done all in one setting, to insure the internal form being concentric and being within .002 T.I.R. with the body diameter. The smallest internal diameter is then ground to a tolerance of .001.



Parts are blanked with a cut thread, out of aluminum bar on a Model 61 New Britain six-spindle screw machine. Parts are then rechucked on a Model 65 New Britain chucker to machine the opposite end at the angular displacement of 2° 34', holding a total angular tolerance of 0° 10'. Subsequent operations include milling the square and end slot, multiple drilling wire holes and grinding threads in three different sizes, maintaining a class 4 tolerance.

This part requires a hard shell of Rockwell 60-65 and a depth of case of .025 to .040. The micro finish of 8 and the tolerance of .0002 on the O.D. are produced through grinding and lapping operations. Parts are made from AMS 6260 steel and processed in controlled lots to insure proper depth of carburization and hardness.



Our new illustrated booklet explains how we combine extra-high precision with high production rates, at low unit cost. Please write on your letterhead for your copy.



THE NEW BRITAIN MACHINE CO.

PRECISION PRODUCTS DIVISION

315 SOUTH STREET, NEW BRITAIN, CONN.

For More Information Circle No. 552 on Inquiry Card—Page 17

(Continued from page 292)

FUEL OIL

JOINT LUNCHEON
NATIONAL COMMITTEE ON
EDUCATION LUNCHEON

* * *

Tuesday Afternoon—May 25

NATIONAL COMMITTEE AND
GROUP SESSIONS

2:00 P.M.

FORUM: FUELS—Coal and Fuel
Oil

* * *

FORUM: NONFERROUS METALS

* * *

PUBLIC RELATIONS WORKSHOP

* * *

BANKING, INSURANCE, AND
GENERAL OFFICE—BUYERS'
GROUP

* * *

CHEMICAL AND ALLIED
PRODUCTS—BUYERS' GROUP

* * *

ELECTRONICS MANUFAC-
TURERS—BUYERS' GROUP

* * *

GOVERNMENTAL, EDUCATION-
AL AND INSTITUTIONAL BUY-
ER'S GROUP

* * *

OIL COMPANY BUYERS' GROUP

* * *

Tuesday Evening—May 25

7:00 P.M.

ANNUAL BANQUET

The Conrad Hilton Grand Ball Room
Presiding: E. F. Andrews,
President, National Association
of Purchasing Agents; Di-
rector of Purchases, Pitman-
Moore Company, Indianapolis,
Indiana.

Invocation

Presentation of J. Shipman Gold
Medal Award

Address

Dr. Kenneth McFarland, To-
peka, Kansas

* * *

INVITATION RECEPTION AND
DANCE

Tuesday—9:30 P.M.—The Conrad
Hilton

PURCHASING AGENTS'
ASSOCIATION OF CHICAGO

* * *

Wednesday Morning—May 26

GENERAL CONVENTION
SESSION

9:15 A.M.

Cornerstones of Purchasing
Presiding: Harold F. Jones,
Chairman, N.A.P.A. Committee
on Education; Purchasing De-
partment, E. I. du Pont de
Nemours & Company, Wilming-
ton, Del.

(Please turn to page 302)



TITANIUM RINGS?

... sure we make them

In 1950 American Welding completed the first successful production flash butt-welding of the new wonder metal — Titanium Alloy. Since that time hundreds of Titanium components have been produced in our plant.

If you use, or are planning to use, fabricated Titanium components, let our Product Development Division study your problem: Our factory is equipped to perform welding, machining, and fabricating of all types of ferrous and non-ferrous metals.

Call or write us today!



THE AMERICAN WELDING & MANUFACTURING COMPANY

460 DIETZ ROAD
WARREN • OHIO

For More Information Circle No. 555 on Inquiry Card—Page 17

MAY, 1954

301



For a perfect job...
for more cutting mileage...
specify

DOUBLE-CIRCLE REAMERS

No standard cutting operation demands greater precision than reaming. That's why you'll always want to be certain that you choose close-tolerance reamers. We say that with Double-Circle you are "double certain".

- (1) You know that Chicago-Latrobe puts into these tools the finest materials, the most precise workmanship and an unexcelled experience in close-tolerance tool making for superior micro finish.
- (2) DOUBLE-CIRCLE offers a really complete line. From their vast line there will be exactly the right tool for your job. Certainly, you can use them with confidence.

QUICK SERVICE
FROM A CHICAGO-LATROBE DISTRIBUTOR



CHICAGO-LATROBE

412 W. ONTARIO ST. CHICAGO 10

DRILLS • REAMERS • COUNTERSINKS • COUNTERBORES • CARBIDE TOOLS • SPECIAL TOOLS

For More Information Circle No. 556 on Inquiry Card—Page 17

(Continued from page 298)

SELECTING THE BUYER: What are the Desirable Characteristics and Qualifications?

Richard M. Kimball, *Purchasing Agent, The Foxboro Company, Foxboro, Mass.*

Wilbur B. England, *Graduate School of Business Administration, Harvard University, Boston, Mass.*

TRAINING THE BUYER: A Practical Program Within the Company

Bruce D. Henderson, *Vice President, Westinghouse Electric Corporation, Pittsburgh, Pa.*
Ralph C. Moffitt, *Director of Purchases, United States Steel Corporation, Pittsburgh, Pa.*

MEASURING THE PERFORMANCE OF MATERIALS MANAGEMENT

Daniel G. Donovan, *Director of Purchases, Pepperell Manufacturing Company, Boston, Mass.*

* * *

11:30 A.M.

OFFICIAL MEETINGS OF MEMBERS OF N.A.P.A.

Presiding: E. F. Andrews, *President, N.A.P.A.*

REPORT OF SECRETARY-TREASURER

G. A. Renard

Report of Resolutions Committee.
Introduction of 1954-1955 President of N.A.P.A.
Introduction of 1954-1955 Executive Committee.
Announcements.

* * *

Wednesday Afternoon—May 26

GENERAL CONVENTION SESSION

2:00 P.M.

What's Ahead?

Presiding: George W. Aljian, *Director of Purchasing and Packaging, California and Hawaiian Sugar Refining Corporation, San Francisco, Calif.*

ADVANCE PLANNING MUST CONSIDER . . .

. . . Trends and Shifts in Population

Dr. V. L. Wharton, *Dean of the College, Texas State College for Women, Denton, Texas.*

. . . Technological Advances and Improvements: What Developments Will Affect Our Future Markets and Prices?

- (a) Chemicals and Synthetics
- (b) Fibers and Fabrics
- (c) Metals and Minerals

Col. George Stuart Brady, *N.A.*

(Please turn to page 304)



REPUBLIC ELECTRO PAINTLOK provides a fine, long-lasting finish

The Mills Company, Cleveland, uses Republic Electro Paintlok in fabricating doors, fronts and panels for their Marblmetal line of toilet compartments. Electro Paintlok is the zinc-plated steel sheet that is chemically treated to take paints, lacquers and synthetic enamels, and to hold them for years.

In addition to providing a smooth, lasting finish, Electro Paintlok affords this company other advantages and economies:

1. There is no cracking, flaking or peeling during fabricating or finishing operations. Electro Paintlok forms easily.

2. The zinc coating guards against underfilm corrosion should painted surfaces become scratched.

3. Only a simple cleaning with a water-soluble cleaner is needed to prepare Electro Paintlok for application of the baked-on enamel finish.

4. Surfaces are pre-conditioned for applying the baked-on enamel finish. No pre-etching is required.

Write for Republic Booklet 525. It tells the complete story on how Electro Paintlok can add eye appeal to your fabricated steel products.

REPUBLIC STEEL CORPORATION

GENERAL OFFICES • CLEVELAND 1, OHIO
Export Dept.: Chrysler Bldg., New York 17, N. Y.

REPUBLIC
ELECTRO ZINC PLATED SHEETS
ELECTRO PAINTLOK • ELECTRO ZINCBOND



Other Republic Products include Carbon, Alloy and Stainless Steels — Sheets, Strip, Bars, Pipe, Tubing, Bolts and Nuts, Wire, Pig Iron

For More Information Circle No. 557 on Inquiry Card—Page 17

WISCONSIN- POWERED HAISS CAR UNLOADER

Speeds Up Material Handling

This Haiss Model 501 combination chain- and belt-type Car Unloader, made by the George Haiss Mfg. Co. division of Pettibone Mulliken Corp., provides another typical example of a time- and cost-cutting Wisconsin Engine power application.

Wisconsin Heavy-Duty Air-Cooled Engines have the "engineered-in" Lugging Power that stays with the job. When sudden shock loads slow down the engine speed and the torque builds up, your Wisconsin Engine hangs on and pulls through without stalling. Heavy-duty engineered design and construction, plus trouble-free AIR-COOLING, are factors that keep the work moving on schedule at all seasons, in all climates.

You can't do better than to specify "Wisconsin Power" for your equipment. Available in 4-cycle single cylinder, 2- and 4-cylinder models, in a complete power range from 3 to 36 hp.



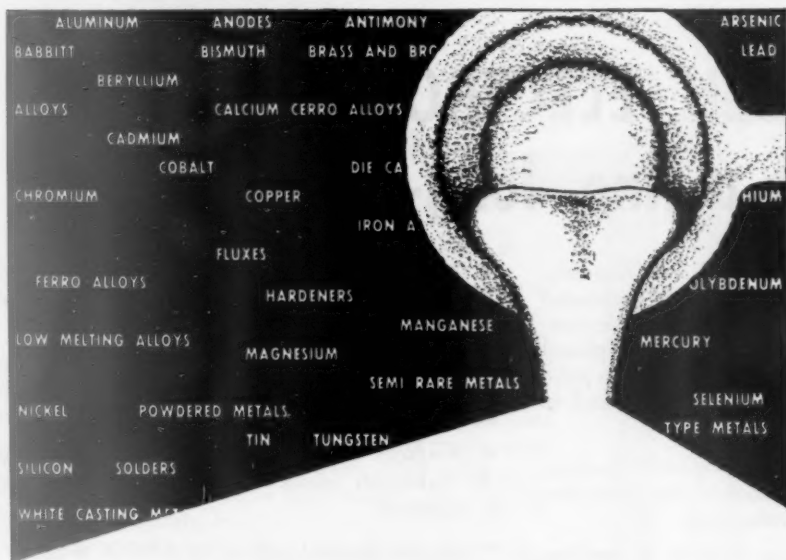
V-type 4-cylinder
15 to 36 hp.



WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

For More Information Circle No. 558 on Inquiry Card—Page 17



For the metals you need...
when and how you want them!



"Putting METTLE into METALS since 1896"

Belmont

SMELTING & REFINING WORKS, INC.

309 BELMONT AVENUE, BROOKLYN 7, N. Y., Dickens 2-4900

For More Information Circle No. 559 on Inquiry Card—Page 17

all metals • all alloys • all forms

(Continued from page 302)
P.A. Materials Consultant,
Washington, D. C.
Dr. John D. Morgan, Materials,
Division, Office of Defense Mo-
bilization, Washington, D. C.
CLOSING OF CONVENTION

What Engineers Are Making

Average starting salaries of January engineering graduates at Illinois Institute of Technology, Chicago, reached an all-time high of \$373 per month this year—an increase of \$32 over a year ago and \$11 more than last June.

The average is based on a survey of mid-year engineering graduates by Earl C. Kubicek, director of alumni relations and placement at Illinois Tech.

The figures are for students receiving a bachelor's degree and planning to work a 40-hour week.

Chemical engineering graduates received the most lucrative starting salaries, with an average of \$394, compared to the January, 1953, figure of \$327.

Other engineering fields and the average salaries received by mid-year graduates of 1953 and 1954 follow, with the 1954 figures listed first; civil, \$388 (\$353); mechanical, \$370 (\$353); electrical, \$367, (\$345), and industrial, \$350 (\$356).

Averages, based on salaries of combined June and mid-year graduating classes, in recent years follow: 1949, \$282; 1950, \$258; 1951, \$295; 1952, \$328, and 1953, \$362.

Manual Compares Valves of 20 Leading Manufacturers

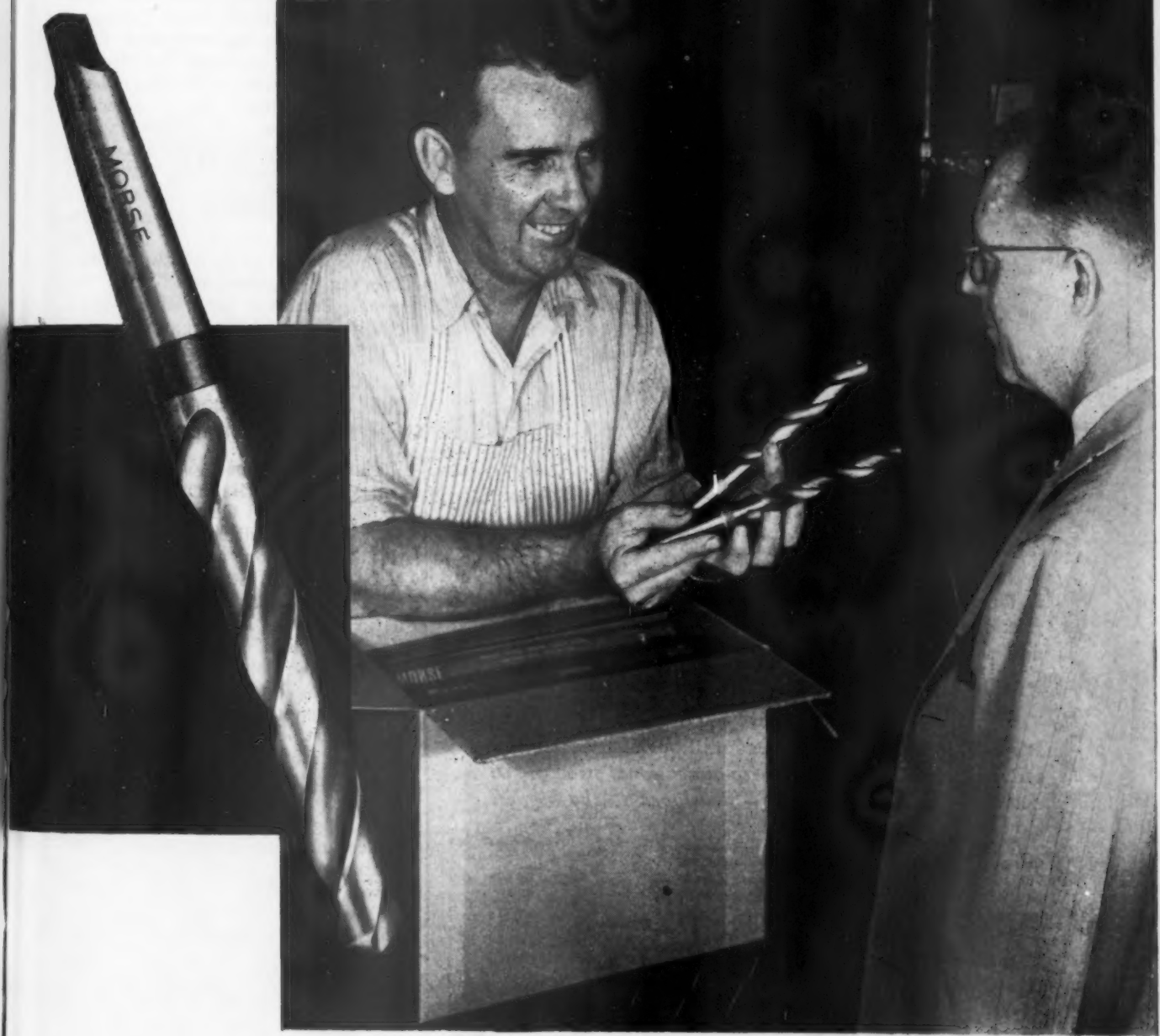
"Equivalent Valves" manual, revised and enlarged edition, 170 pages loose-leaf, is now available.

It compares valves of twenty leading manufacturers by material, type, size, pressure rating, structural variations. The manual is designed to aid purchasing agents, engineers, state and county officials, who must specify valves or check on the specifications of others. The publisher claims the manual reduces valves specification checking to one tenth the time usually required.

It contains over 50,000 postings of figures, names, descriptions. Revised edition published February 1, 1954. Price is \$19.75. Revision sets are furnished to present manual holders for \$10.00. Available from Equivalent Valves Company, P. O. Box 816, Station H, Los Angeles 44, California.

TOOLS

POSITIVELY NO ADMITTANCE



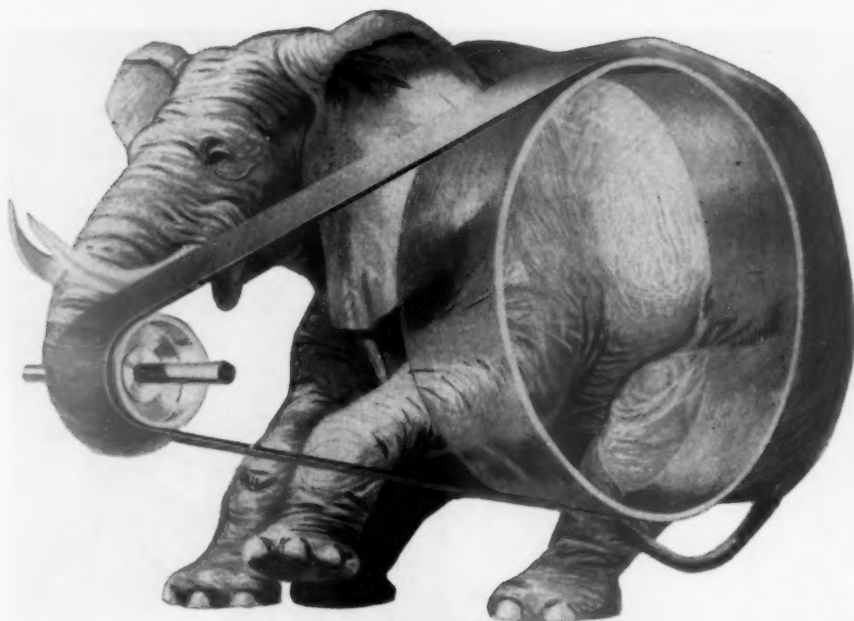
MORSE

Cutting Tools

...buy them by phone from
your Morse-Franchised
Distributor and save
ordering time

MAY, 1954

For More Information Circle No. 561 on Inquiry Card—Page 17



PULLINGRIP

G&K Leather Belting grips the pulleys for more production-power

It Grips — Like an elephant's trunk, leather's resilient, frictional surface firmly *grips* the pulley face, causing belt and pulley to move as one power unit.

It Pulls — Leather is strong, flexible, with controlled stretch — gives peak performance on *any* drive.

It's 3-Dimensional — Leather's millions of fibres are interlaced to form the tough *three-dimensional* structure so necessary for PULLINGRIP — developed to the highest degree in G&K Leather Belting.

Call your G&K Industrial Supplies Distributor for flat, round, link and V-belting, belt lacing, dressings, cements, packings and specialty leathers. Write for free Belting Catalog 101.

B-2

GRATON
AND
KNIGHT

Memo: Purchasing Agents

It takes top grade leather belting to handle a drive like this . . . but even the simplest drive in mill and factory will give you more production-power if it is equipped with G&K Leather Belting. Choose from three famous brands . . . RESEARCH®, HEART OAK, SPARTAN® . . . you'll get full value for your money.

GRATON & KNIGHT
Company

WORCESTER, MASSACHUSETTS

World's Largest Manufacturer of Industrial Leather Products

For More Information Circle No. 562 on Inquiry Card—Page 17

Guide Book Gives Information on Drilling and Tapping

A new illustrated guide book brings together in condensed, readable form a consensus of what is good practice in obtaining best drilling and tapping results at minimum cost.

"Guide Book For Better Drilling" is the title of the new 24-page 6" x 9" handbook. Compiled by R. H. Rideout, Chief Engineer of the Drill Division of Buffalo Forge Company, it is available to interested firms through their machine tool dealers. Contents include: a Drilling Chart; a Tapping Chart; tips in selection and application of the seven models of "Buffalo" Drilling Machines; Twist Drill Definitions, Types of Points and Diagrams; Twist Drill Failures and Their Causes; a Table on Feed and Speeds for Drills of High-Speed Steel; Cutting Oils; Tapping Information; Tap Diagrams; Causes of Tap Failure; and a list of Don'ts for Operators.

1 1 1

266 Standards Coordinated and Approved During 1953

The annual report of the American Standards Association, issued by Vice Admiral George F. Hussey, Jr., managing director, announced the coordination and approval of 266 American Standards in 1953.

The American Standards revised in '53 totaled 185; there were 81 new standards. The greatest number of new standards was in civil engineering and construction.

The standards are the product of expert representatives of all groups interested—some organized in committees expressly for the purpose, and many others coming from long established technical societies and trade associations.

Among the important standards were the safety code preventing the accidental switching of medical gases, requirements for gas conversion burners in domestic ranges, specifications for filter sets to analyze noise and other sounds, and for household electric flatirons.

Letter symbols for radio, acoustics and meteorology became nationally accepted as American Standards last year.

New information made important revisions in two widely-used standards. The National Electrical Code and the Safety Code for Mechanical Refrigeration.

Over 1400 American Standards are now in use in the United States.

For More Information Circle No. 563
on Inquiry Card—Page 17 →
PURCHASING

Need special-purpose wire or steel?

WHETHER it's manufacturing special wire and steel to your specifications, or working with your engineers to develop new types to solve new problems, you can always count on National-Standard for something extra . . . in quality control . . . in product uniformity . . . and in service! Not just an idle boast. We've been doing it that way for 47 years . . . and would like mightily well to prove it to you.

Check these N-S products

NATIONAL-STANDARD DIVISION Niles, Michigan Phone: 1700

Stainless Steel Wire002" to .065" Diameter
Stainless Steel Flat Wire002" to .040" Thickness
Width .020" to .090" x .010" to .067" Diameter
Music Spring Wire002" to .054" Diameter
High Carbon Steel Wire002" to .054" Diameter
Fine Wire Rope002" to .054" Diameter
Minimum Rope Diameter .008"
Maximum Rope Diameter .048"
Braided Wire—FlatUp to 1" Wide
Braided Wire—TubularUp to 18" Diameter

WORCESTER WIRE DIVISION 70 James Street Worcester, Massachusetts Phone: 2-2871

Fine Wire: Diameter .002" to .075"
Stainless
High Carbon
Low Carbon
Manganese
Galvanized
Tinned
Cadmium Plated
Beryllium Copper
Music Spring Wire: Diameter .002" to .250"
Flat Wire: Maximum .125" Wide
Maximum .060" Thick

ATHENIA STEEL DIVISION Clifton, New Jersey Phone: Prescott 9-1881

Tempered or Untempered Flat
High Carbon Strip and Flat Wire—
Blue, Straw or Bright
Width: Maximum 6 1/2" Wide
Minimum015" Wide
Thickness: Maximum060" Thick
Minimum001" Thick
Above Range for Either Regular
Spring Steel or Specialty Steels
Stainless: Hard Rolled375"
Maximum Width025"
Maximum Thickness1"
Egiloy: Maximum Width025"
Maximum Thickness025"

REYNOLDS WIRE DIVISION Dixon, Illinois Phone: 3-1411

Wire Cloth
Carbon and Stainless Steel—Non-Ferrous—Copper Clad
Plain Weave Up to 120 Mesh
Twill Weave Up to 150 Mesh
Dutch Weave Up to 250 Mesh
Electro and Hot Dip Galvanized, Tinned—Before Weaving



ATHENIA STEEL Clifton, N. J. Flat, High Carbon, Cold Rolled Spring Steel
NATIONAL-STANDARD Niles, Mich. Tire Wire, Stainless, Fabricated Braids and Tape
REYNOLDS WIRE Dixon, Illinois Industrial Wire Cloth
WAGNER LITHO MACHINERY Jersey City, N. J. Metal Decorating Equipment
WORCESTER WIRE WORKS Worcester, Mass. Round and Shaped Steel Wire, Small Sizes

DIVISIONS OF NATIONAL-STANDARD CO.
NILES, MICHIGAN

it's the right time

to Investigate the
Qualities of



ALLOY STEEL

America's largest clock was recently rebuilt for a spectacular illuminated sign in Chicago. It measures 50 ft. in diameter — hands and movement weigh 3000 lbs. The new driveshaft was made from 6 ft. of 3½-inch round "B" No. 3X heat-treated bar, chosen for its machinability as well as its high physical properties.

"B" No. 3X heat-treated bars machine more readily and finish more smoothly than standard alloys because of their particular analysis and method of manufacture. They cut costs by eliminating distortion, scaling, straightening — and often grinding — as well as the cost of heat-treating finished parts.

HY-TEN "B" No. 3X bars are used for a wide range of applications. A trial order will convince you of their true economy. Just call your nearest W.L. representative.

Write today for your FREE COPIES of Wheelock, Lovejoy Data Sheets, indicating your title and company identification. It contains complete technical information on grades, applications, physical properties, tests, heat treating, etc.

**WHEELOCK,
LOVEJOY
& COMPANY, INC.**

Warehouse Service

CAMBRIDGE • CLEVELAND
CHICAGO • HILLSIDE, N. J.
DETROIT • BUFFALO
CINCINNATI

In Canada

SANDERSON • NEWBOULD, LTD., MONTREAL

HY-TEN

and **AISI**

140 Sidney St., Cambridge 39, Mass.

and Cleveland • Chicago • Detroit
Hillsdale, N. J. • Buffalo • Cincinnati

For More Information Circle No. 565 on Inquiry Card—Page 17

Plastics Exposition to Be Held in Cleveland in June

More than 150 companies representing all phases of plastics manufacturing will exhibit the most recent technical advances in the industry at the 1954 National Plastics Exposition to be held June 7-10 at the Public Auditorium in Cleveland, Ohio.

Together with the displays of molding, lamination, extrusion, fabrication, machinery, etc., the exposition will feature a variety of talks. Unique, in this respect, will be addresses at technical sessions by customers of the plastic industry. In addition, new plastic material and methods of fabrication will be covered by speakers from diverse segments of the industry.

1 1 1

Annual Production of Stainless Ingots Passes Million Tons

Annual production of stainless steel ingots rose above one million tons for the first time in 1953, American Iron and Steel Institute has reported. The preliminary figure of 1,015,303 net tons compared with the previous record of 933,730 tons in 1951, the 1952 output having been reduced slightly to 930,164 tons because of the long strike.

Stainless steels are among the most rapidly growing products in the metal industries. Since the first postwar year, 1946, the output of stainless increased 84 per cent, as of the close of 1953. Meanwhile, the total steel output increased 67 per cent. As compared with 1937, stainless steel output increased about 6½ times while total steel output approximately doubled.

As with total steel products, the greatest tonnage among manufacturing users last year went to the automobile industry. Other leading uses were in household goods, industrial equipment and aircraft. Construction and military uses also took substantial quantities, and there were many other users, such as restaurant kitchens, railroad cars, hospital equipment and radio and electronic devices.

**FOR FURTHER INFORMATION
ON PRODUCTS IN THIS ISSUE
PLEASE USE INQUIRY CARD
ON PAGE 17**

The Right Wire Rope
will do the trick!



There's an AMERICAN TIGER BRAND WIRE ROPE that's just made for tough lifting jobs like this

● You need a wire rope with great strength for overhead traveling cranes that make heavy lifts day in and day out. In addition, the rope must be very flexible because it is constantly bending over sheaves and drums.

Tiger Brand 6 x 43 Filler Wire Rope is widely used for this type of application. It's the most flexible and has the highest reserve strength of the standard six-strand hoisting ropes, and is made of tough Monitor Improved Plow Steel that has the strength to stand up in hard service.

If you're equipping a ladle crane in a foundry, where the rope will get very hot, you will want to use 6 x 43 Filler Wire with a wire rope core—the heat would dry out a fiber core and cause the rope to deteriorate quickly. The wire core also increases the strength of the rope and decreases its stretch under load.

You will encounter literally hundreds of other applications for wire rope. And there's a Tiger Brand Rope that assures long service in every one of those tough jobs . . . but you've got to get the *right* rope. The wrong one may last only half as long. It pays to analyze the requirements of every job very carefully and then choose the rope that exactly fits.

The American Wire Rope Engineer in your area will be glad to help you. He's an expert on ropes—knows just what every rope can do and knows what type of rope every job requires. Call him next time you need wire rope.



AMERICAN STEEL & WIRE DIVISION • UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U-S-S AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed



UNITED STATES STEEL

Personalities



IN THE NEWS

Arthur S. Fleming, Director of Defense Mobilization, has announced the appointment of **George A. Landry** as Assistant Director of Production Re-



George A. Landry

quirements and Programs. Mr. Landry is on loan from the Western Electric Company, Inc., New York City, where he has been Vice President of its Purchasing and Traffic Divisions since 1952. Mr. Landry's responsibilities at Western will be assumed by F. W. Bierwirth, presently Vice President-Finance. Mr. Landry joined Western Electric in 1911 and has been manager in charge of engineering and manufacturing telephone central office equipment and division manager of the Specialty Products Shops. He was also operating manager of the company's central office nationwide installation force. During World War II he was with the Office of Production Management, later known as the War Production Board. In 1949 he was elected president of the Sandia Corporation. He is a director of that company.

The appointment of **Herbert Boshea** as Purchasing Agent for the Bridgeport Thermostat Division has been announced by the Robertshaw-Fulton Controls Company. Mr. Boshea was formerly with the General Electric Company and is a member of the Connecticut Purchasing Agents Association.

In a move designed to meet the increasing purchasing responsibilities of its Industrial Chemicals Division, American Cyanamid Company, New York City, has created the Industrial Chemicals Division Purchasing Department and named **Robert C. Brown** as Division Purchasing Agent. Mr. Brown had been purchasing agent for Jefferson Chemical Company, Inc., a firm owned jointly by American Cyanamid and the Texas Co.

Edward E. Emerick, Jr., Director of Purchases for the Ashland Oil & Refining Co., Ashland, Ky., has been



Edward E. Emerick, Jr.

given the additional post of exploration-production manager. Mr. Emerick joined Ashland in 1931 and was named assistant treasurer in 1932 and assistant secretary in 1937. During the past 12 years he has headed the company's purchasing activities.

R. S. Merrick is Vice President in charge of Purchasing for the Standard Horse Nail Corporation, New Brighton, Penna.

Utah-Idaho Sugar Company, Salt Lake City, has named **A. J. Sabey** as Purchasing Agent.

Charles F. Wilson, for many years Supervisor of Stores in the Purchasing Department of Lone Star Gas Company, Dallas, Texas, retired from that posi-



Charles F. Wilson

tion April 1. He has joined the staff of Hunsaker Trucking Contractor, Inc., at Carrollton, Texas, and will continue to contact the purchasing field in that connection. Mr. Wilson has a distinguished record of service in Association work, both local and national. He has been President and National Director of the Purchasing Agents Association of Dallas, Vice President of N.A.P.A. for District 2, and Chairman of the Public Utility Buyers Group of N.A.P.A.

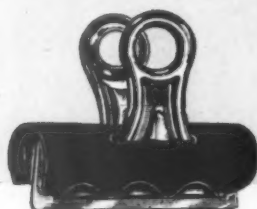
Raymond I. Bond has been appointed Chief Buyer of Veeder-Root Inc., Hartford, Conn. He has been with the company since 1942 and has been an assistant to the purchasing agent since 1950.

The Rockwell Manufacturing Co., Pittsburgh, has named **Ted Mauk** as Purchasing Agent for the firm's Columbus, Ohio, tool plant. Mr. Mauk has been with Rockwell for more than 15 years and has served as personnel manager and buyer at Rockwell's DuBois plant.

Riegel "PLASTIC-DOT" Trade-Mark WORK GLOVES

**GUARANTEED TO OUTWEAR 2 OR MORE PAIRS
OF 10 OZ. CANVAS GLOVES**

Now in 14 styles . . . including reversible



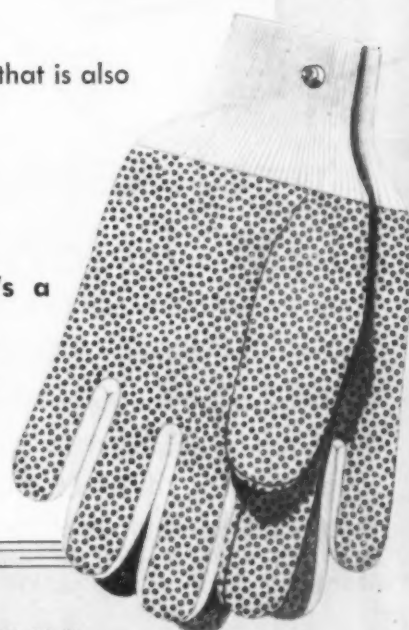
The most amazing work glove you have ever seen . . .
now used by leading plants in every part of the country.

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- Outwear regular canvas gloves by at least 2 to 1
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- Give your workers a long-wearing glove . . . that is also soft, flexible, comfortable

But...

Whatever the operation there's a
Riegel glove to fit the job . . .
"Plastic-Dot," plastic-coated, canvas,
jersey, leather palm, or full leather.



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Well, just reach for the convenient 'yellow pages' of the telephone directory for practically all types of suppliers, their addresses, telephone numbers and thumbnail descriptions of their products or services.

Many a P.A. finds the 'yellow pages' a "friend in need."

AMERICA'S BUYING GUIDE FOR OVER 60 YEARS



For More Information Circle No. 568 on Inquiry Card—Page 17

Frank Heffner has been named Purchasing Agent for the City Pattern Foundry & Machine Company, Detroit, Mich. Mr. Heffner is veteran of more than 20 years of service with the company.

The Aviation Gas Turbine Division of Westinghouse Electric Corporation, South Philadelphia, has appointed **George L. Dukes** as Manager of Purchases. Mr. Duke joined Westinghouse in 1945 as staff assistant in the purchasing department in Pittsburgh and moved to the Westinghouse Small Motor Division, Lima, Ohio, as Purchasing Agent in 1952.

Aeroil Products Company, Inc., South Hackensack, N. J., has named **John B. Foley** as Director of Purchases.

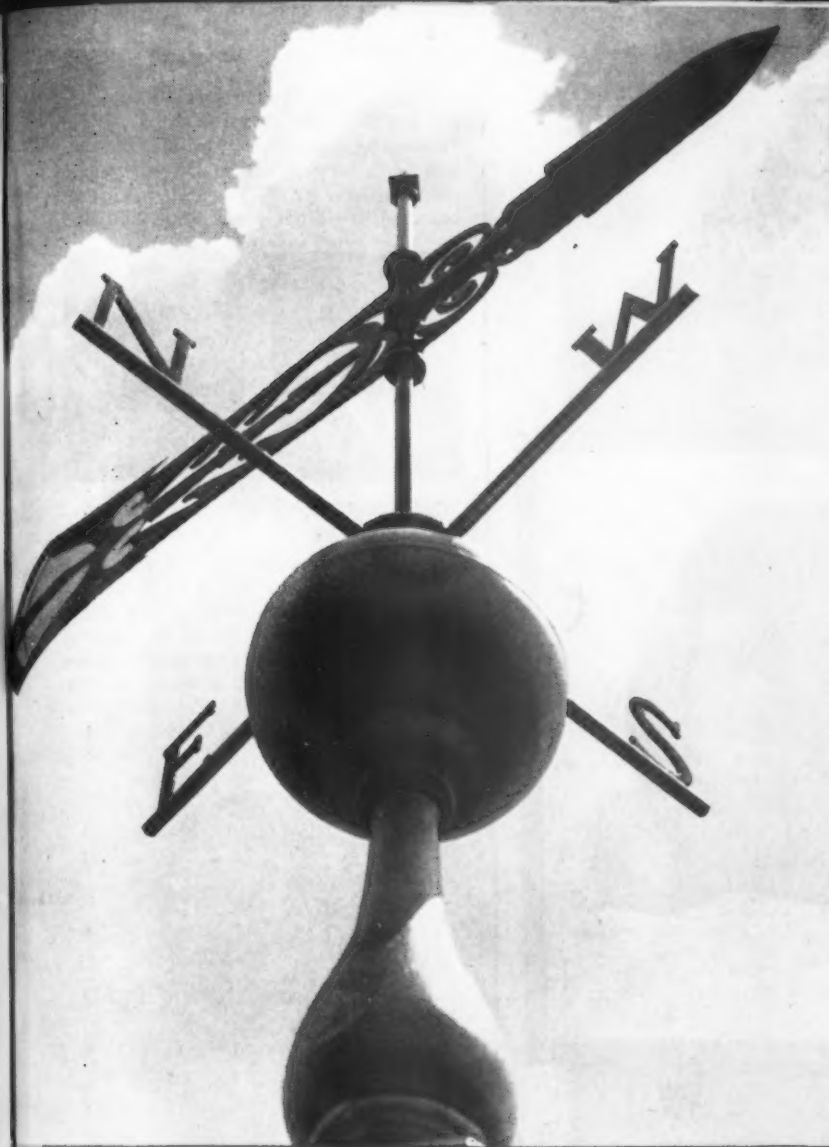


Frank Warner

Frank Warner, Director of Purchases at the Crosley Division, Avco Manufacturing Corporation, Cincinnati, is retiring after 10 years with the company. He joined Crosley in 1940 as Assistant Director of Purchases and became Director in 1944. Previously, he had been with United Wallpaper Factories, Nash-Kelvinator and General Motors.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has announced new appointments in its West Allis works purchasing department. **A. A. Mattes** is now Purchasing Agent in charge of tooling and subcontracting with **F. L. Back** as Assistant Purchasing Agent. **D. E. Bender** becomes Assistant Purchasing Agent of foundry products and supplies section and **J. A. Williams** takes over as Assistant Supervisor of the expediting section.

The appointment of three supervisory personnel in the purchasing department of the Special Product Division, Ford Motor Company, Dearborn, Mich., was announced recently. **M. J. Connard** is supervisor of the administration section, **J. M. Walker** is senior buyer of stampings, trim and mechanical hardware section and **S. M. Sheridan** is senior buyer of machined parts, rubber, electrical equipment and tools section.



A Four-Way Selection

This photograph of a weather vane seems a good way to point out the fact that there are four different types of Midwest Welding Elbows (see below). These are more types than are manufactured by any other company. This greater selection is important to users of welded piping because it gives the engineer greater latitude in piping design and permits improvements and economies not otherwise possible in welded piping systems. For more information on this subject, ask for Catalog 54.

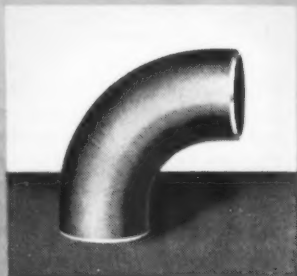
MIDWEST PIPING COMPANY, INC.

Main Office: 1450 South Second Street, St. Louis 4, Mo.

Plants: St. Louis, Passaic, Los Angeles and Boston

Sales Offices:

New York 7—50 Church St. • Chicago 3—79 West Monroe St.
Los Angeles 33—520 Anderson St. • Houston 2—1213 Capitol Ave.
Tulsa 3—224 Wright Bldg. • Boston 27—426 First St.
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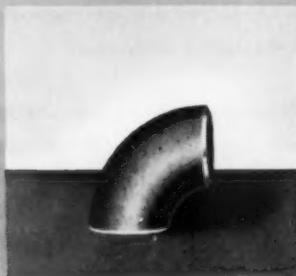
MIDWEST "LONG TANGENT"

Same radius as ASA but tangent equal to 25% of nominal pipe size on each end. Saves pipe, layout and welding time. Costs no more than ASA. Sizes to 36".



ASA STANDARD

Dimensions conform to applicable size range of American Standard for Butt-Welding Fittings. ASA B16.9. Tolerances much less than allowable. Sizes to 36".



SHORT RADIUS

Recommended where space is limited. Sizes to 30". Also available with "Long Tangents" in sizes 14" to 36".



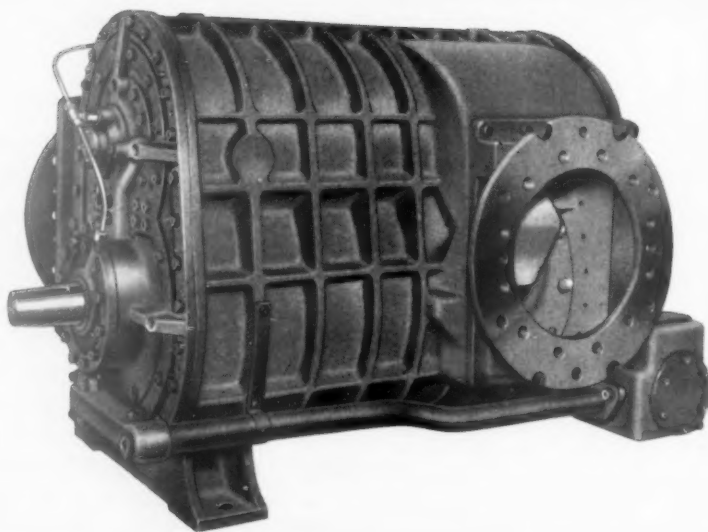
MIDWEST REDUCING

Takes the place of a straight size elbow and a reducer. Eliminates one weld, reduces pressure drop, easier to insulate. Sizes to 16", reductions to half size.

MIDWEST WELDING FITTINGS

IMPROVE PIPING DESIGN AND REDUCE COSTS

DISCOVER HOW THE
Standardaire® Blower
 INCREASES THE EFFICIENCY
 OF YOUR AIR CONVEYING SYSTEM



The STANDARDAIRE Axial Flow, Positive Displacement Blower gives you the greatest output per pound weight ever achieved by this type of blower. The compactly designed STANDARDAIRE delivers a uniform flow of air, free from shocks which decrease efficiency.

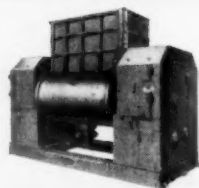
The STANDARDAIRE Blower employs an exclusive principle of compressing air on a modified adiabatic cycle. This provides a wide range of pressures with a minimum of internal losses. Air is taken in and discharged smoothly from the pockets which form between the precision machined, cycloidal form screw type rotors.

1-54

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 CORPORATION

**BLOWER-STOKER
 DIVISION**
 370 Lexington Ave.
 New York 17, N. Y.

It will pay you to investigate the STANDARDAIRE Blower. Write today for further information.



Read Standard also manufactures a complete line of chemical mixers for industrial and laboratory uses.

Claude W. Mottinger, Purchasing Agent for the Rubber division of Hewitt-Robins, Inc., Buffalo, N. Y., has been named to the newly-created post of Director of Purchases. He has been with the company since 1951 and



C. W. Mottinger



R. C. Estes

was previously a member of the purchasing department of the B. F. Goodrich Co. He is a member of the Purchasing Agents Association of Buffalo. Succeeding Mr. Mottinger as Purchasing Agent for the division is Robert C. Estes, who joined Hewitt-Robins in 1937 and has been Assistant Purchasing Agent since 1950.

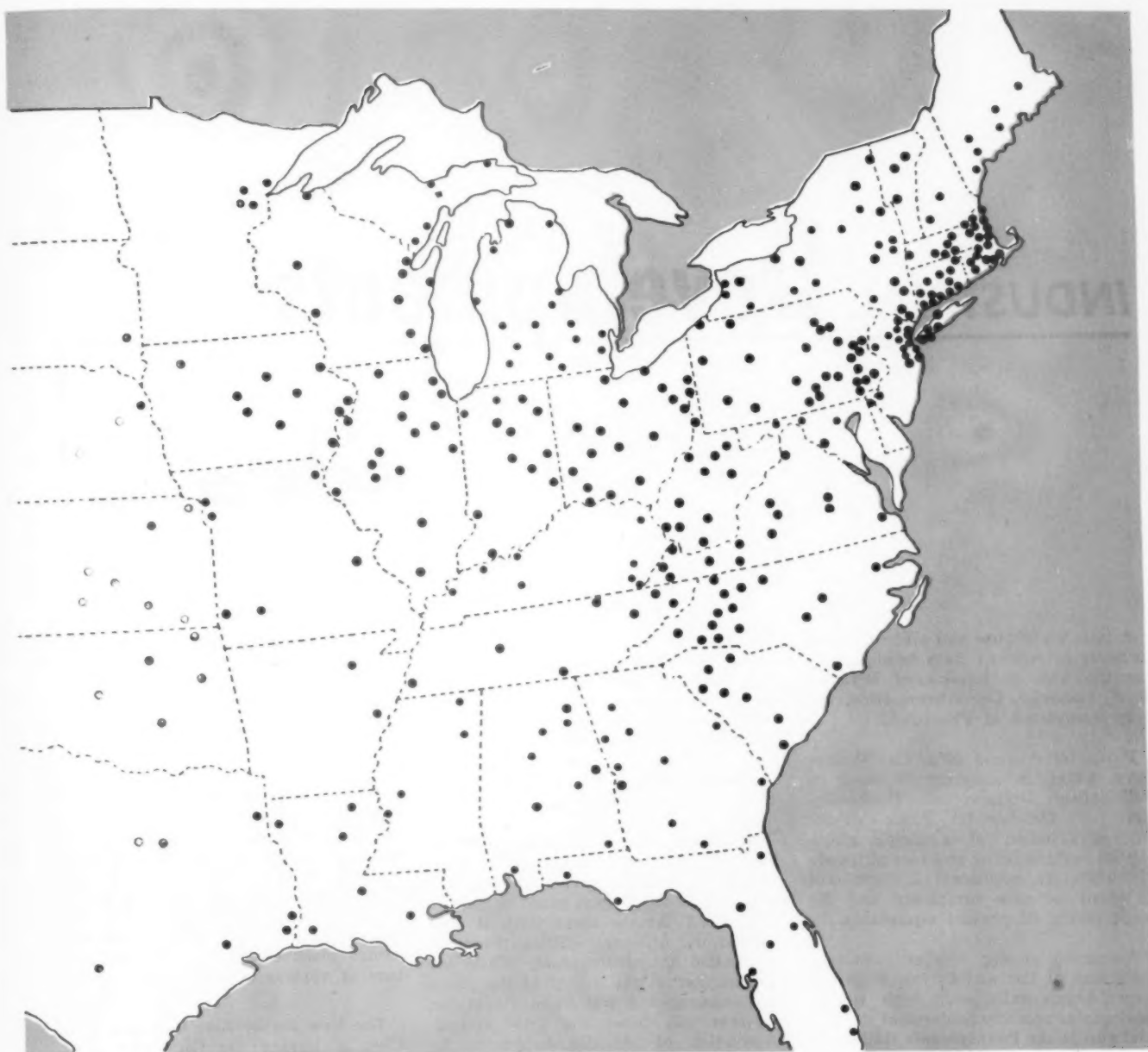


Ivan J. Klingaman

Ivan J. Klingaman is the new Director of the purchasing division of Eli Lilly and Company, Indianapolis, Ind. Mr. Klingaman joined Lilly in 1945 after 14 years with the Cudahy Packing Company. Since 1952, Mr. Klingaman has been Assistant Director of the purchasing division.

John MacAuley Brown, Director of Purchasing for the Veeder-Root Co., Hartford, Conn., died recently. Mr. Brown had been with Veeder-Root for 27 years and was a past president of the Purchasing Agents Association of Connecticut. He was also a former vice president of the National Association of Purchasing Agents.

**FOR FURTHER INFORMATION
 ON PRODUCTS IN THIS ISSUE
 PLEASE USE INQUIRY CARD
 ON PAGE 17**



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Thus the Nicholson and Black Diamond distributor representative serving you is a useful technical consultant instead of just an order taker.

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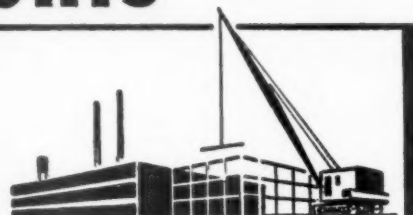
(In Canada: Nicholson File Company
of Canada Ltd., Port Hope, Ontario)



**...A FILE FOR EVERY PURPOSE
A DISTRIBUTOR FOR EVERY USER**

For More Information Circle No. 574 on Inquiry Card—Page 17

INDUSTRIAL Developments



A new warehouse and office building to serve as Arizona state headquarters for the **Tire & Equipment Division, B. F. Goodrich Co., Akron, Ohio**, has been completed at Phoenix.

Plume & Atwood Mfg. Co., Waterbury, Conn., is planning to move its Fabricating Division to Thomaston, Conn., by October 1st. Plans call for the construction of a single story, 150,000 sq.ft. building at a cost of nearly \$1,250,000. An additional \$200,000 will be spent for new equipment and the modernizing of present equipment.

A rarity among rubber conveyor belts, one of the world's few belts reinforced internally with high tensile steel cables recently underwent its first trial run at the **Pennsylvania Railroad's** new \$10,000,000 ore pier in the Delaware River at Greenwich Point, Philadelphia.

Made by **B. F. Goodrich Co., Akron, Ohio**, the 93,000-pound, 54-inch wide belt extends 1,600 feet along a concrete pier and inshore to giant, twin 600-ton capacity hoppers which will feed ore into railroad cars. A two-belt system permits two ore ships to unload at once at a rate of 3,600 tons of ore an hour.

Reichhold Chemicals, Inc., White Plains, N. Y., will construct a large phthalic anhydride plant on property adjacent to its present plant in Elizabeth, N. J. At the same time, it will expand the present facilities, there, of its maleic anhydride plant. While no information on the design of the plant was announced, it was claimed that the projects will boost the total annual production of phthalic anhydride to 80,000,000 lbs. and of maleic anhydride to 10,000,000 lbs.

The Foxboro Co., Foxboro, Mass., has doubled its facilities in Dallas, Texas, with the completion of its new branch factory. The building is of modern brick construction, designed on a single level for maximum efficiency.

Witco Chemical Co., New York City, is opening its new Pacific Coast plant in the Lynnwood section of Los Angeles. The plant is composed of three modern factory buildings with open and covered storage facilities and a railroad siding. Initial production will be confined to Witco paint driers with future plans calling for the manufacture of various organic chemicals.

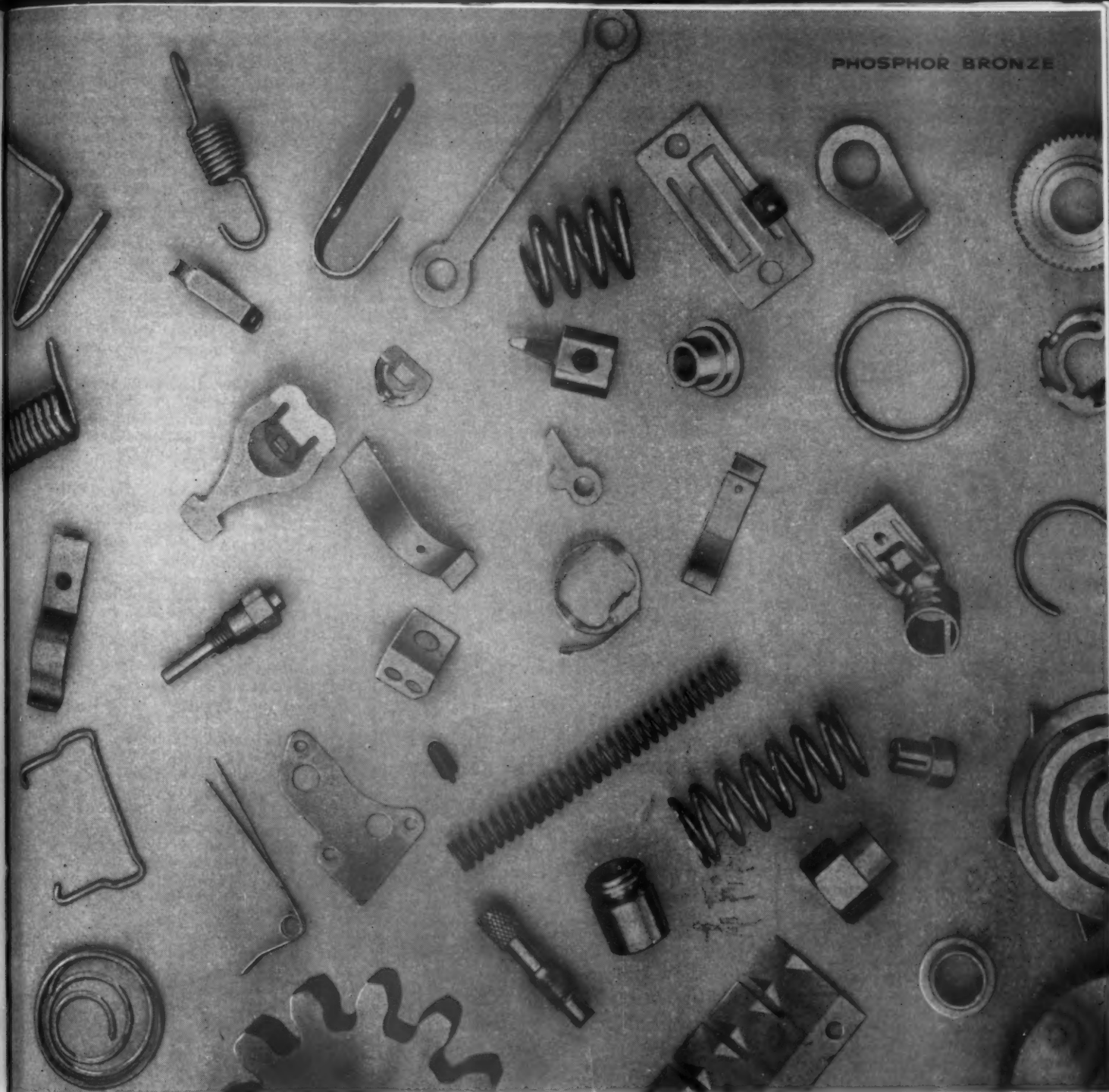
The New Jersey Zinc Co., New York City, is buying the Gloucester City, N. J., titanium dioxide plant of the American Cyanamid Co., New York City. The plant will be turned over to New Jersey Zinc after Cyanamid's new and larger titanium dioxide plant at Savannah, Ga., has been completed. It is expected this will occur in the latter part of 1955.

New executive and sales headquarters at the Newark, N. J., plant of **Federal Electric Products Company**, have been recently completed. These facilities cover nearly 12,000 square feet and has made it possible to devote the entire first floor of the building to manufacturing operations.

Standard Pressed Steel Co., Jenkintown, Pa., has completed a \$10,000,000 phase of a continuing program of expansion and modernization under which the firm has doubled its floor space to 650,000 square feet during the past four years. Additional plans for 1954-55 will be announced shortly. The completed phase was a projected 10-year effort telescoped, partly by the demands of Korea, into four years.



There are 3,289,402 cu. ft. of enclosed space and 70,686 sq. ft. of floor space in this huge dome-shaped **LeTourneau Semisphere Building** built by **R. C. LeTourneau, Inc., Longview, Texas**. There are no interior structural supports for the 85-foot high, 300-foot diameter building and all assembly work for the aluminum and steel building was created at ground level.



Parts made of tough ANACONDA Phosphor Bronze wear better, last longer

Ten alloys are available in sheets, plates, strips, wire, rods, bars and seamless tubes.

Constant wear and flexings. Periodic stresses. Fatigue and corrosion. These are the things that can knock machine parts out of commission. But they can't hurt those shown above.

Here's why. All of them are made of ANACONDA Phosphor Bronze Alloys. And these copper-tin alloys are strong and tough. They are non-magnetic. They conduct heat and electricity well. And you can work them easily.

In bushings, gears and bearings Phosphor Bronze doggedly resists abrasion. In switches, springs, diaphragms and electrical contacts it keeps its high elasticity under conditions where less rugged alloys fail.

ANACONDA Phosphor Bronze comes in 10 standard compositions (including a free-cutting alloy). Tin content ranges from 1.25% to 10.0%.

Quality? Our record speaks for itself—a recent study of sheet metal covering two years' production shows that claimed unsuitable quality was at the amazingly low ratio of 400

pounds per million pounds shipped.

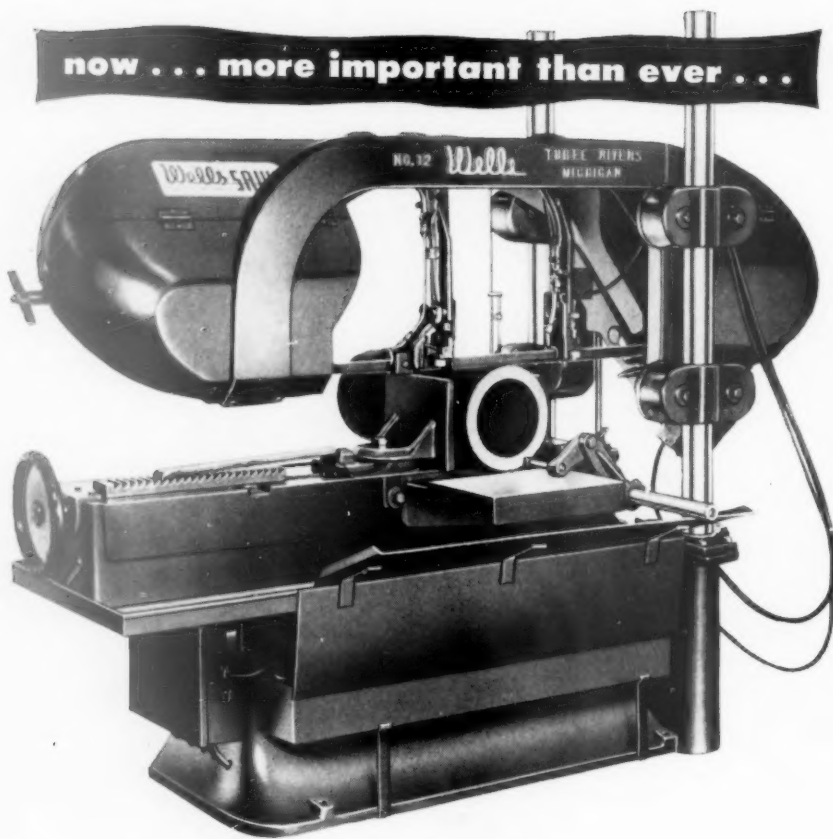
Tell us what you make and how it's used. We'll help you select the correct Phosphor Bronze Alloy. *The American Brass Company, Waterbury 20, Conn.*
In Canada: *Anaconda American Brass Ltd., New Toronto, Ont.*

2404

ANACONDA®
PHOSPHOR BRONZE

Sheets • Plates • Strips • Wire • Rods
Bars • Seamless Tubes • Special Shapes

now . . . more important than ever . . .



the efficiency, economy and dependability of Wells Heavy-Duty Cut-Off Saws

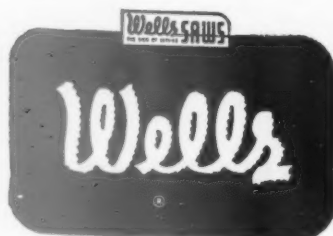
DESIGN DETAILS

- Cutting action parallel to bed.
- Easily controlled depth cutting.
- Automatic frame return and blade motor shut off.
- Large capacity — 12" x 16", rectangular; 12 3/4", rounds; die blocks; 12 3/4" deep, 16" wide, 18" clearance bed to blade.
- Selective speeds: 60, 115, 200, 300 Ft. per min.
- Ample power: 1 H.P. blade motor, 1/2 H.P. hydraulic system motor.
- Weight: approximately 1845 lbs.

Coupled with the Wells-O-Bar Feed Master (an optional extra) the Wells No. 12 becomes a fully automatic cut-off machine. Ask for further information.

SEARCHING for a way to reduce metal cut-off costs? Here's an answer—the Wells No. 12 Heavy Duty Saw. It's a hydraulically operated, metal cutting band saw designed to step up production with greater accuracy and eliminate unnecessary hand labor in cut-off work. Featuring an automatic cutting cycle, the Wells No. 12 also provides controlled blade tensioning, parallel-to-bed cutting and a wet cutting system.

For the efficiency, economy and dependability that you need to meet that "tougher competition ahead," find out more about the Wells No. 12. Ask your Wells Dealer for full information or write direct to the factory.



The Pioneers of Horizontal METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
2400 JACKSON AVENUE, THREE RIVERS, MICHIGAN

For More Information Circle No. 578 on Inquiry Card—Page 17

Construction of a 115,000 volt north-south electric transmission line connecting the former Public Electric Light Company area in northwestern Vermont with the 44,000 volt main transmission system of Central Vermont Public Service Corp., Rutland, Vt., has been announced. Scheduled for completion this summer, the project involves 32 miles of 115,000 volt line—the first such high voltage in Vermont—and 11 miles of 69,000 volt line, the highest present voltage in the state. The new line and related substations at Middlebury, Essex Junction and Milton will cost approximately \$935,000.

Olin Industries, Inc., East Alton, Ill., has announced plans for the erection of a cellophane plant at Kent, Ind., on the Wabash River between Covington, Ind., and Danville, Ill.

Pittsburgh Plate Glass Co., Pittsburgh, has purchased the property of the Porcelier Manufacturing Co., South Greensburg, Pa. It consists of two buildings with more than 140,000 square feet of floor space on seven acres of land. The main building is of steel, concrete and brick with two mezzanine floors.

Manufacturing operations have begun at the new 40,000 sq. ft. plant of Micro-Precision Inc., Evanston, Ill.

The Townsend Company, New Brighton, Pa., has started its land clearing work for the construction of a new \$1,000,000 plant at Ellwood City, Pa. Plans call for provision of 81,000 sq. ft. with future addition of another section to provide a total working space of 321,000 sq. ft. The first phase is scheduled for completion by fall. No starting date has been announced for the \$500,000 second edition.

Mellon-Stuart Co., Pittsburgh, has formed a new operating subsidiary, Mellon-Stuart Industrial Construction Co., to specialize in engineering and construction in the heavy industrial field.

Royal Typewriter Co., New York City, has announced plans to spend \$1,500,000 during the next two years on a plant modernization program to increase its production capacity by 28%.

Fray Machine Tool Company has moved its manufacturing-engineering services and main office to a new plant in Burbank, Calif. The new building provides approximately 20,000 sq. ft. of work space.

The erection of a \$500,000 brick manufacturing plant for the Alton Brick Co., Alton, Ill., is nearly completed in Maryland Heights, Mo. The plant, which will double Alton's production capacity, will house a huge tunnel kiln that has been designed to provide automatic transfer of bricks from the machines to rail cars.

For More Information Circle No. 579 on Inquiry Card—Page 17→

Order
from
Stock
for
Quick
Assembly
on the Job



switch capacities

PULFUZSWITCH — 30 to 100
amps, 250 volts and 30 and
60 amps, 600 volts.

KLAMPSWITCHFUZ — 30
to 200 amps, 250 volts AC or
DC.

SNUFARC — 30 to 200 amps,
600 volts AC, 2, 3 and 4 poles.

Main Capacities — 250, 400
and 600 amps, 250 or 600 volts
in six basic assemblies.

Above illustration shows "On
the Job" assembly of combin-
ation Klampswitchfuz and Pulfuz-
switch Panelboard.



Feeder Distribution PANELBOARDS

Ⓐ Pulfuzswitch, Klampswitchfuz and Snufarc feeder distribution panelboards are now available on the "panel base assembly" plan, which means that you can order these popular panelboards right out of stock for quick and easy assembly on the job.

All components of each type of panel — box, front, panel back, main bus bars and lug connections, neutral bar and 2 1/4 inch adjustable cover — are compactly packaged and are being stocked by Ⓐ distributors for the convenience of contractors, engineers and others. Switch units are separately packaged also.

Approved by the Underwriters' Laboratories, Inc., for label service, these panelboards are the finest in safety and efficiency. All switch units are of the operating type and horsepower-rated. They combine switch and fuse in one unit so that the current is "Off" when fuses are accessible. For maximum efficiency, all current-carrying switch and fuse contacts are heavily silver-plated and fuseholders clamp under pressure.

The next time you need a feeder distribution panelboard, ask for Ⓐ.

Frank Adam Electric Co.

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• For further information,
see your Ⓐ distributor
or consult a
Ⓐ representative listed
in Sweet's Industrial
Construction, and Plant
Engineering file.



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For More Information Circle No. 581 on Inquiry Card—Page 17

MAY, 1954

331



STAINLESS STEEL FASTENINGS by Anti-Corrosive

because



SAVE INITIAL COST!

Superior production capacity and know-how means *lower costs* from Anti-Corrosive, America's oldest and largest firm dealing *exclusively* in stainless steel fastenings!



SAVE TIME!

IN STOCK inventory of more than 9,000 varieties and sizes of stainless fastenings means *immediate delivery* of your needs! Streamlined service on special orders, too!



SAVE OPERATING COSTS!

Anti-Corrosive's *consistent* top quality protects your production schedules, eliminates rejection headaches, means trouble-free operation!

Write for FREE Catalog 54D, the *one complete reference handbook* to stainless steel fastenings! Varieties, sizes, prices and discounts *at a glance!*



**ANTI-CORROSIVE
METAL PRODUCTS CO., INC.**

**Castleton-on-Hudson,
New York**

For More Information Circle No. 582 on Inquiry Card—Page 17

The Bakelite Co., a division of Union Carbide and Carbon Corp., New York City, and DeVoe & Reynolds Co., Inc., New York City, have reached an agreement for the licensing of the Bakelite Company to operate under the epoxy resin patents held or controlled by DeVoe & Reynolds.

A new bark-burning boiler has been completed at the Mobile, Ala., pulp and paper mill of Hollingsworth & Whitney Co., Boston, Mass.

National Vulcanized Fibre, Wilmington, Del., has acquired the Marshall Bros. paper mill at Yorklyn, Del. Marshall Bros. now becomes a wholly owned subsidiary of National.

What may well be the largest single installation of gas-fired unit heaters in the United States has just been completed in the **General Depot of the Army Quartermaster Corps in Memphis, Tenn.** The United States Air Conditioning Corporation, Minneapolis, Minn., reports that six carloads of heaters, in sizes of 400,000 to 500,000 BTU and with a combined capacity of 54,600,000 BTU per hour, are in operation, heating nearly 30 acres of warehouse space. When all units are in use, the total gas consumption is in excess of 50,000 cu. ft. per hour.

The Brass & Copper Supply Co., Baltimore, Md., has purchased a new warehouse. It is a one-story and basement brick and steel structure with nearly 26,000 sq.ft. of floor space.

Foote Mineral Company, Philadelphia, has announced plans to expand its facilities for the production of lithium ores and chemicals. It will add to its facilities at Kings Mountain, N. C. and Sunbright, Va., plants.

Sacks-Barlow Foundries, Inc. and Newark Malleable Iron Works, Newark, N. J., have recently installed a new mechanized molding and sand conditioning production unit for the manufacture of gray and malleable iron castings. The system cost \$750,000.

Modernization of the Lima, Ohio, plant of American Mat Corporation, Toledo, Ohio, has now been completed.

The newly built research, testing and quality control laboratory of H. Muehlstein & Co., Inc., has been opened at the company's Jersey City, N. J., plant. The new facility will greatly expand the experimental work which the 43-year old company maintains for the benefit of its plastic and rubber manufacturing clients.

Arnold W. Brady & Associates, Detroit, has purchased all the outstanding stock of Townsend Industries, Inc., specialists in metal stampings, assemblies and production painting for the automotive, aircraft, air-conditioning and radio-television industries.



What's behind this perfect "Flash-in-the Pan"?

Top camera-makers in this country use Bristol Brass in their flash reflectors... because Bristol Brass draws evenly... just a true, unblemished surface that takes a smooth, even plate and focuses the most light where it will do the most good.

This is a businesslike example of one of the many good reasons why so many fabricators of so many different types of products won't settle for anything but *Bristol Brass* strip, coil, rod and wire. See what Bristol's Sales Engineering Service can do to help with *your* fabricating problems. And this service is no farther away than your telephone: Bristol 9246 — or wire or write:

THE BRISTOL BRASS CORPORATION

has been making Brass strip, rod and wire here in Bristol, Connecticut since 1850, and has offices and warehouses in Boston, Chicago, Cleveland, Detroit, Milwaukee, New York, Philadelphia, Providence, Rochester. The Bristol Brass Corporation of California, 1217 East 6th St., Los Angeles 21. The Bristol Brass Corp. of Ohio, 1607 Broadway, Dayton.

"Bristol-Fashion means **Brass at its Best**

**YOUR
DEPENDABLE
SOURCE FOR
QUALITY
NAME PLATES
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RIGHT PRICE**



Our experience, skilled craftsmanship plus the latest and best equipment enable us to provide standout identification of your products *at the right price*. You can depend on us for plates that reflect the quality of your products.

GET OUR QUOTATION Send a rough sketch, blueprint or sample, with specifications, for quotation—without obligation to you. Or write us fully about your requirements in name plates, instruction plates, dials, panels, scales, etc. **Write for free book**, "Etched or Lithographed Metal Products of Quality," containing full color examples.



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Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Coin Banks • Lithographed or Screened Plastic Name Plates or Dials • Aluminum Anodizing by the Alumilite Process.

SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

The enlargement of the capacity of the concentrator at the Creighton Mine of **International Nickel Company of Canada, Ltd.**, Copper Cliff, Ontario, to 12,000 tons of ore per day, has been announced by the company. The mill building has been enlarged to a length of 465 feet and two crushers have been added to the original four. Also, 36 flotation machines were added, bringing the total to 180. The company is presently producing refined nickel at an annual rate of approximately 275,000,000 pounds.

Pittsburgh Plate Glass Co., Pittsburgh, has purchased the Glasfloss Division of Tilo Roofing Co. Inc. Assets of the Glasfloss Division include the manufacturing plant at Hicksville, Long Island, N. Y., as well as machinery and other equipment for the manufacture of fiber glass. The Hicksville plant, constructed in 1946 for the government's Defense Plant Corporation, contains nearly 80,000 sq. ft. of floor space.

American Electro Products Inc., Waterbury, Conn., has completed construction of a wing which more than doubles the production capacity of the former plant.

A new plant is being built by **C. I. Hayes Inc.**, at Cranston, R. I. Completion of the project is expected shortly after mid-year. The new plant will have a straight-through assembly floor, 80 x 340 feet, with suitably arranged machine shop, stock, storage, drafting and office areas, plus a separate laboratory section for experimental purposes and to develop heat treating methods.

Hanson-Van Winkle-Munning Co., Matawan, N. J., has purchased the Electroplating Equipment & Supply Division of the A. J. Lynch Co. in California.

Plans for a new "garden type" plant at Westbury, Long Island, were recently announced by **Metallizing Engineering Co., Inc.** The new building will occupy 65,000 sq. ft. of a 7-acre tract and will include over 20,000 sq. ft. of office space in addition to 45,000 sq. ft. of manufacturing, storage and shipping area. The building will be one-story, constructed of brick, masonry, steel and glass.

The purchase of the George J. Hagan Co. by **Salem-Brosius, Inc.**, Pittsburgh, was announced recently. Both companies design, manufacture and sell furnaces and heat treating equipment, but to different industries. The Hagan Company will be operated as a wholly-owned subsidiary.

The St. Pierre Chain Corp., Worcester, Mass., has purchased the assets of the Trimont Manufacturing Co., Roxbury, Mass. The new acquisition will be known as the Trimo Wrench Division.



Unretouched photo

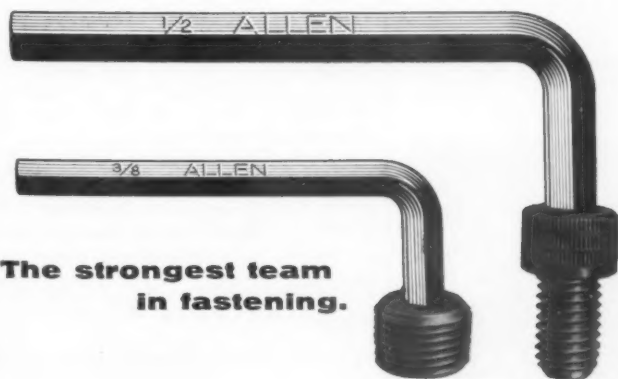
To prove to yourself how tough Allen heat treated keys really are, slip a section of pipe over an Allen hex key that has already tightened a socket set screw to the maximum recommended. Twist the key around its axis a full 90° — IT STILL WON'T BREAK! When the Allenoy steel key finally

does shear, the break will be smooth. No splinters, no jagged edges to cause injury.

• • •

For the toughest drive key made, get Allen Hex Keys, size-marked for convenience in all sizes above 1/16".

When ordering through your local industrial distributor, specify genuine Allen Hex Keys.



**The strongest team
in fastening.**

ALLEN

MANUFACTURING COMPANY
Hartford 2, Connecticut, U.S.A.



For More Information Circle No. 587 on Inquiry Card—Page 17

from phone call to questionnaire...



Mayflower

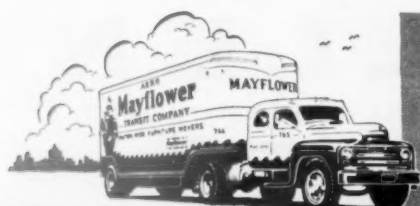
Moving Service

SAVES YOU TIME, TROUBLE, MONEY!

From the moment you phone in your order for a Mayflower move on personnel transfer, you save time because Mayflower handles all the details . . . you save trouble because the high quality of standardized Mayflower service eliminates foul-ups and assures shipper satisfaction . . . you save money because speed and efficiency puts your man on his new job with a minimum of lost time. The Service Questionnaire that goes to every shipper after his move completes the job and helps us keep the quality of our service to you the best . . . every time. The next time you have company personnel to move, call your local Mayflower agent.

AERO MAYFLOWER TRANSIT CO., INC. • INDIANAPOLIS

Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.



AERO Mayflower
America's Finest

NATION-WIDE FURNITURE MOVERS

For More Information Circle No. 588 on Inquiry Card—Page 17

NEWS OF YOUR SUPPLIER

T. M. Gilbert has been elected president of the **Gilbert Paper Co., Menasha, Wis.**, to succeed the retiring George M. Gilbert.

Stewart-Warner Electric, radio, television and electronics products division of **Stewart-Warner Corporation, Chicago**, has named William V. Ryan as military electronics representative.

Stillman Rubber Co., Los Angeles, has opened a Cleveland division. Charles Histed will serve as district manager.



Joseph S. Pelles

The new sales manager for transportation industries of the **Lewis-Shepard Co., Watertown, Mass.**, is Joseph S. Pelles.

The Philadelphia office of the **Brown & Sharpe Mfg. Co., Providence, R. I.**, has been moved to 7 Bala Ave., Bala-Cynwyd, Pa.

Albert F. Delaney has been appointed a district sales representative for **Atlas Plywood Corp., Boston, Mass.** He will cover western Massachusetts and Connecticut.

The **Wesson Co., Detroit**, has appointed James E. Compton to its field engineering force. He has been assigned the Pittsburgh area.

Damascus Tube Co., Greenville, Pa., has appointed the following representatives: Leon F. Goode, Tennessee; B. C. Myers, Louisiana and Texas; C. A. Roberts Co., eastern Michigan; Wagner-Fulton, California and William Woodburn, parts of New York and Pennsylvania.

The Diesel Department, Hamilton Division, **Baldwin-Lima-Hamilton Corp., Hamilton, Ohio**, has appointed Robert P. Bolster as northeastern representative. His territory will include Canada, New England and upper New York State.

For More Information Circle No. 589 on Inquiry Card—Page 17

Rome RoZone®

**This Superior Ozone-Resistant Insulation
Deserves Your CONFIDENCE**

Q: WHAT IS ROZONE?

A: A PREMIUM quality, ozone-resistant, oil-base type insulation developed by Rome Cable research, exceeding *all* requirements of ASTM specification D-574. RoZone is exceptionally resistant to corona action and aging. It shows high electrical stability in water and possesses excellent electrical characteristics. While the preferred outer covering on non-shielded cables is a RoPrene (Neoprene) sheath, RoZone insulation can be supplied with either braided or lead sheath coverings. In addition, on shielded types of cable, a special thermoplastic sheath (ROSEAL) is available.

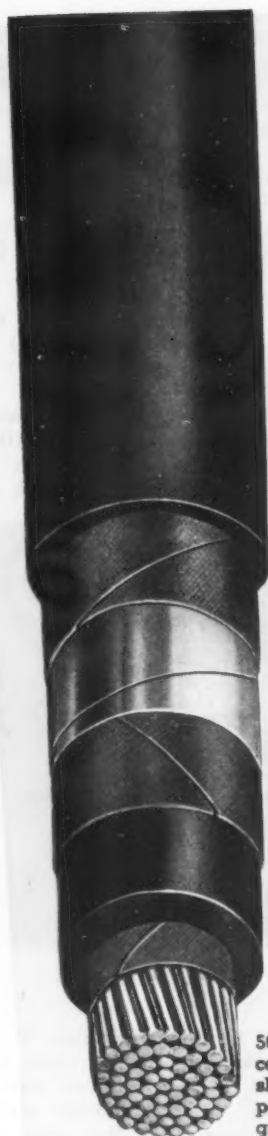
Q: WHERE IS ROZONE USED?

A: Rozone is recommended for all specialized or general purpose wiring where long-time dependability is paramount. It is particularly suitable for higher voltages up to 15 KV. With proper sheath protection, RoZone is widely used for high voltage underground and aerial power distribution, street lighting circuits, signal and control cables, as well as for low-voltage power requirements where conditions of moisture or heat are present.

Q: WHAT DO ROZONE TESTS SHOW?

- A:**
1. High resistance to aging. Longevity of original characteristics.
 2. On the basis of long-time test, dielectric strength exceeding 400 volts per mil, for 5,000 volt services. Surge or impulse strength proportionately high.
 3. Utmost resistance to corona and ozone cutting.
 4. Low dielectric loss.
 5. Exceptional electrical stability in water.

The Rome Power and Control Cable Catalog contains complete information on Rome RoZone. Send for your copy today!



500,000 CM stranded single conductor RoZone insulated, shielded, RoPrene sheathed power cable . . . 15,000 volts, grounded neutral.



It Costs Less To Buy the Best

RoZone is approved and accepted by leading utilities, industrials and consulting engineers.

ROME CABLE

Corporation

ROME • NEW YORK

and
TORRANCE • CALIFORNIA



For More Information Circle No. 591 on Inquiry Card—Page 17

MAY, 1954

341

Safer than Slippery Flooring



A matador is aware of the risks in his job but because SLIPPERY FLOORS GIVE NO WARNING—often look safe—workmen can be killed or hurt before they know *their* danger! A practical remedy is A. W. SUPER-DIAMOND—tough, rolled-steel floor plate with an exclusive, engineered raised-diamond surface. SUPER-DIAMOND puts 40 anti-slip traction points in every foot-step—gives maximum foot safety at low cost. Investigate SUPER-DIAMOND for accident prevention. Write for new Booklet SD-28

A.W. SUPER-DIAMOND



Economy Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY
 CONSHOHOCKEN, PA.

Other Products: A. W. ALGRIP Abrasive Rolled Steel Floor Plate
 Plates • Sheet • Strip • (Alloy and Special Grades)

For More Information Circle No. 592 on Inquiry Card—Page 17

Jervis B. Webb Co., Detroit, has appointed George Webb as regional sales manager in Michigan. He will handle the Detroit, Flint and Grand Rapids sales staffs. Howard L. Meyer takes over the accounts formerly handled by Mr. Webb.

H. J. Karakas has been promoted from field engineer to manager of the newly created eastern seaboard sales division of the Pfaudler Co., Rochester, N. Y.

Cratex Manufacturing Co., San Francisco, has appointed Edward R. Bate as sales manager.

The Sterling Abrasives Division, Cleveland Quarries Co., Tiffin, Ohio, has named James L. Goodwin as Cleveland district manager.



J. A. Dickson

The Steel Strapping Division of the Stanley Works, New Britain, Conn., has appointed J. A. Dickson as district manager for the southeastern states. He will headquarter at the company's district offices in Atlanta, Ga.

Roland J. La France is now manager of the Paint Sales Division, Joseph Dixon Crucible Co., Jersey City, N. J.

The new central division sales manager of the Farr Co., Los Angeles, is Harold M. Robson. He will supervise from Farr's offices in Chicago.

Victory Metal Manufacturing Corp. has moved to 200 W. Germantown Pike, Plymouth Meeting, Penna.

Fred B. Roberts has been named southern district manager of the J. H. Williams & Co., Buffalo, N. Y. He will headquarter at the company's new warehouse in Atlanta, Ga.

Crucible Steel Company of America, Pittsburgh, has opened a new field office in Columbus, Ohio. D. W. Sturges has been assigned to the new office.

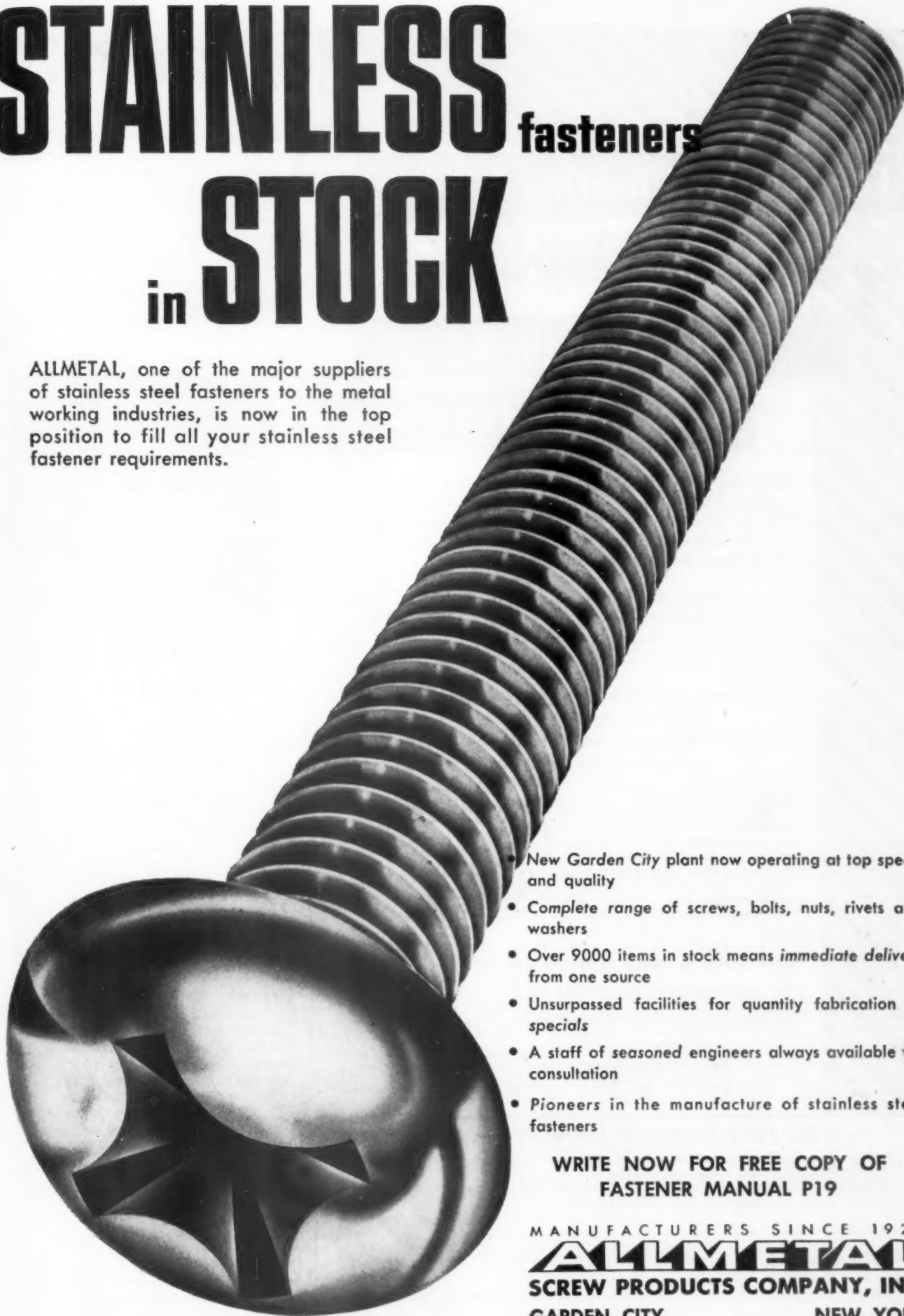
The Airoyal Co., New York City, is the new name for Compressed Air Products, New York City.

For More Information Circle No. 593 on Inquiry Card—Page 17→

PURCHASING

STAINLESS fasteners in STOCK

ALLMETAL, one of the major suppliers of stainless steel fasteners to the metal working industries, is now in the top position to fill all your stainless steel fastener requirements.



- New Garden City plant now operating at top speed and quality
- Complete range of screws, bolts, nuts, rivets and washers
- Over 9000 items in stock means *immediate delivery* from one source
- Unsurpassed facilities for quantity fabrication of specials
- A staff of seasoned engineers always available for consultation
- Pioneers in the manufacture of stainless steel fasteners

WRITE NOW FOR FREE COPY OF
FASTENER MANUAL P19

MANUFACTURERS SINCE 1929
ALLMETAL
SCREW PRODUCTS COMPANY, INC.
GARDEN CITY NEW YORK

MAY, 1954

For More Information Circle No. 594 on Inquiry Card—Page 17

347

For Industrial Roofing & Siding

specify *Grade-Marked*

Galvanized Sheets

for **PEAK PERFORMANCE**

Engineers and designers of industrial and commercial buildings know galvanized sheets to be superior building material for this type of construction—particularly for roofing and siding. They know that time-tested galvanized sheets offer:

- **SHORT-TERM plus LONG-TERM ECONOMY**
Low initial cost, low application cost, low per-year cost
- **STRENGTH OF STEEL; RUST-PROTECTION OF ZINC**
Withstand rough treatment, add structural strength and are fireproof

All galvanized sheets give years of useful service. But the heavier the zinc coating, the longer the life of the base sheet. Because various weights of zinc coating look alike on the surface, it pays to specify a grade-marked sheet . . . Get the heaviest coating you can buy!



IT'S THE ZINC THAT STOPS THE RUST

For long, rust-free service, specify a heavy duty sheet such as the "Seal of Quality" with a zinc coating of 2 ounces per square foot. For heavier coatings order according to ASTM Specification A 93.

**ATTENTION:
MAINTENANCE
DEPTS.**

Get the facts on MZP (Metallic Zinc Paint) for structural steel and galvanized surfaces. Also, zinc for cathodic protection and grounding electrodes. Check coupon below.

Send For FREE VALUABLE BOOKLETS

American Zinc Institute, 60 East 42nd Street, New York 17, N. Y. Dept. P-5

Send booklets checked without cost or obligation

- ☐ CATHODIC PROTECTION with Zinc Anodes ☐ MZP Metallic Zinc Paint
☐ GRADE-MARKED GALVANIZED SHEETS for Industrial Buildings

Company _____

Name of Individual _____

Address _____

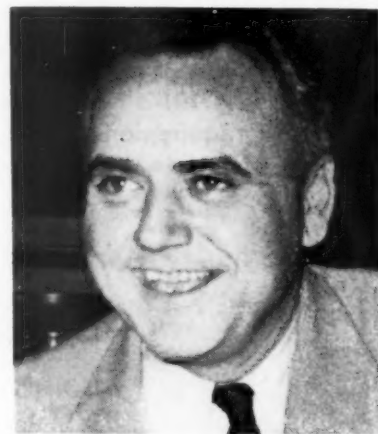
City or Town _____ Zone _____ State _____

For More Information Circle No. 595 on Inquiry Card—Page 17

Edmond P. Severns has been made vice president and general manager of the **Continental Steel Corporation**, Kokomo, Ind.

Thomas Kelly and Murray Nelson have been named regional managers for the **Continental Electric Equipment Co.**, Cincinnati. Mr. Kelly will cover eastern Pennsylvania, southern New Jersey and Delaware. Mr. Nelson's territory will be comprised of Maryland, District of Columbia and Virginia.

The Industrial Distributor Division of **The Weatherhead Co.**, Cleveland, has appointed C. Allen Dolby as sales manager.



William J. Phillips

William J. Phillips is now vice president and general manager of **Crawford Steel Foundry Co.**, Bucyrus, Ohio.

Michigan Machinery and Equipment Co., St. Joseph, Mich., has been appointed western Michigan distributor for the **Clark Equipment Co.**, Construction Machinery Division, Benton Harbor, Mich., handling power shovels and tractor-shovels.

The appointment of Richard L. Whitmer as sales representatives in the New York branch of the **Berger Manufacturing Division, Republic Steel Corp.**, Cleveland, was announced recently.

United States Steel Corp., Cleveland, has named James K. Sedgwick as assistant manager of merchant products sales for its American Steel & Wire Division.

The **Stearns-Roger Manufacturing Co.** has moved to 660 Bannock St., Denver 4, Colo.

Fred A. Sheridan is now sales manager of the **Lakey Foundry Corp.**, Muskegon, Mich.

Warren Steam Pump Co., Inc., Warren, Mass., has appointed Richard D. Butler, Jr., as sales representative for western Massachusetts, Connecticut and Rhode Island.

DESIGNERS—Cut New-Equipment Costs

F-6366 | F-6367
7 KW | 12 KW
MAXIMUM PLATE INPUT

with *Federal's*
2 NEW TRIODES

...incorporating built-in savings and proved design features that increase tube dependability and life and multiply the performance quality of new units

For Electronic Heating, Broadcast and Communications Service

- ① **High-Efficiency Radiator** requires reduced pressure drop ... cuts blower cost for new equipment.
- ② **Grid and Filament Leads Attached** for convenience of designers ... for extra savings.
- ③ **Double Helical Filament** of thoriated tungsten ... for high peak emission ... lower temperature.
- ④ **No Internal Insulators** to expose tubes to danger of arc-over and gassiness.
- ⑤ **Internal Corona Ring** eliminates trouble with hot-spots and glass cracks.
- ⑥ **Kovar Terminal Cups** used throughout for ruggedness required in industrial service.
- ⑦ **Full Voltage** can be safely applied to the cold filament ... no step starting or high reactance transformers necessary.

Federal's F-6366 and F-6367 are the power triodes that new equipment designers have been waiting for ... to boost the efficiency of induction and dielectric heating units, broadcast and communications equipments ... to bring important savings to production lines!

Both tubes not only provide *more* ruggedness, *longer* service life and *higher-quality* performance, but they actually cut costs for manufacturers ... saving as much as 80% on blower costs, while factory-attached grid and filament leads eliminate this expense.

Federal's new triodes feature simplified construction ... with fewer potential trouble spots. Wide element spacing gives better protection against filament-grid shorts. Rated filament voltage may be applied to cold filament, eliminating need for step starting or high reactance filament transformers. Both tubes are operable up to 30 Mc/SEC at full ratings ... anode up or anode down.

Equipment manufacturers now using the F-6366 and F-6367 in new designs report they are "extremely well pleased" with their stamina and performance. For prices and technical data, write to Federal, Dept. K-434.

Handbook of Tube Operation



Federal's 72-page booklet gives complete data on efficient operation of tubes in service. Mail your request to the department listed above.

EXCLUSIVE WITH FEDERAL—
 READY FOR DELIVERY FROM STOCK



Federal Telephone and Radio Company

VACUUM TUBE DEPARTMENT 100 KINGSLAND ROAD, CLIFTON, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.
 Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

For More Information Circle No. 598 on Inquiry Card—Page 17

MAY, 1954

351



Newark Wire Cloth is made of all malleable metals such as aluminum, brass, bronze, phosphor bronze, copper, monel, Nichrome, nickel and stainless steel; as well as the noble metals such as gold, silver, platinum, etc.

This wide range of metals enables you to select the one wire cloth to meet your conditions of corrosion and/or contamination.

In all metals, Newark Wire Cloth is accurately woven in a wide range of meshes, ranging from very coarse (4 inch space cloth), to extremely fine (up to 400 mesh). Our reputation for 'Accuracy' through more than 75 years is your guarantee of wire cloth quality.

We maintain a large stock of popular sizes in the more commonly used metals and can make prompt shipment. Let us quote on your requirements.

Send for our New Catalog E.

Newark
Wire Cloth
COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

For More Information Circle No. 599 on Inquiry Card—Page 17

Industrial Metals, Inc., Kansas City, Mo., has been named a distributor for Reynolds Metals Co., Louisville, Ky.

The Foundry Sales Division, Frederic B. Stevens, Inc., Detroit, has named Sidney J. Tuson as sales representative.

The Metal Carbides Corporation, Youngstown, Ohio, has named three new sales engineers. They are: Sam Ernst, Chicago; Joseph R. Weiss, Jr., Cincinnati; and William Hudak, Newark, N. J.

Graybar Electric Co., New York City, has opened a new branch in New Brunswick, N. J. W. G. Trometter has been named manager of the branch.



J. Ross Arnold

Link-Belt Co., Chicago, has named J. Ross Arnold as district manager at Birmingham, Ala.

Lewis K. Stamp has been appointed to represent the Newark Wire Cloth Co., Newark, N. J., in Ohio and Erie County, Pennsylvania.

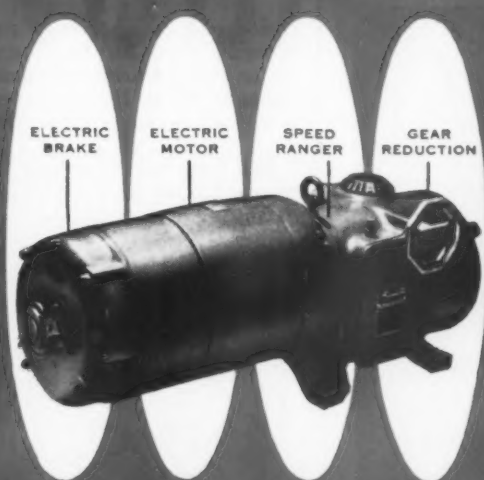
Panellit, Inc., Chicago, has announced the appointment of Millard D. Shriver as general sales manager. He will headquarter in Skokie, Ill.

Zenith Plastics Co., Gardena, Calif., has consolidated all its aircraft engineering and fabrication facilities into a new division to be known as Zenith Aircraft.

Williams and Co., Louisville, Ky., has been named as a distributor for Parker Appliance Co., Cleveland.

Arthur J. Stobbart will be the middle Atlantic territory representative for the Bridgeport Metal Goods Manufacturing Co., Bridgeport, Conn. He will headquarter in Philadelphia.

Lamson Corp., Syracuse, N. Y., has assigned J. M. Ilacqua as a field engineer for the territory of upper New York, east of Rochester. He will be replaced in his former Buffalo area by Albino E. Hall.



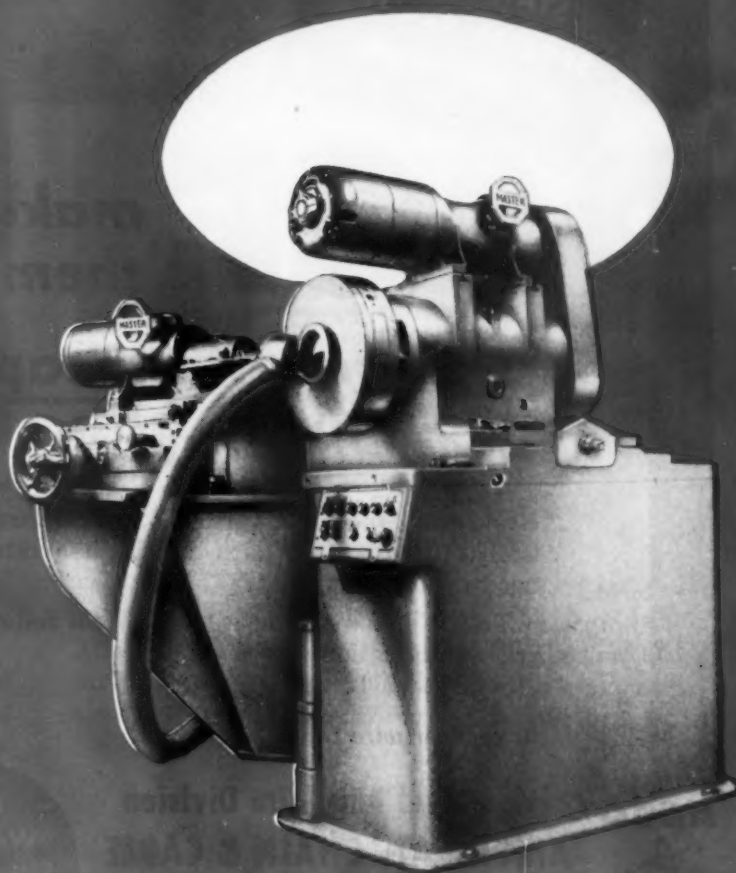
reason

The electric motor, the electric brake, the variable speed drive, the gear reduction unit . . . all are designed so that they easily combine into an integral power drive.

result

The RIGHT horsepower, the RIGHT shaft speed, the RIGHT features in one compact unit that you can use RIGHT where you want it. Only one unit to buy, handle and install . . . saves time, space and money.

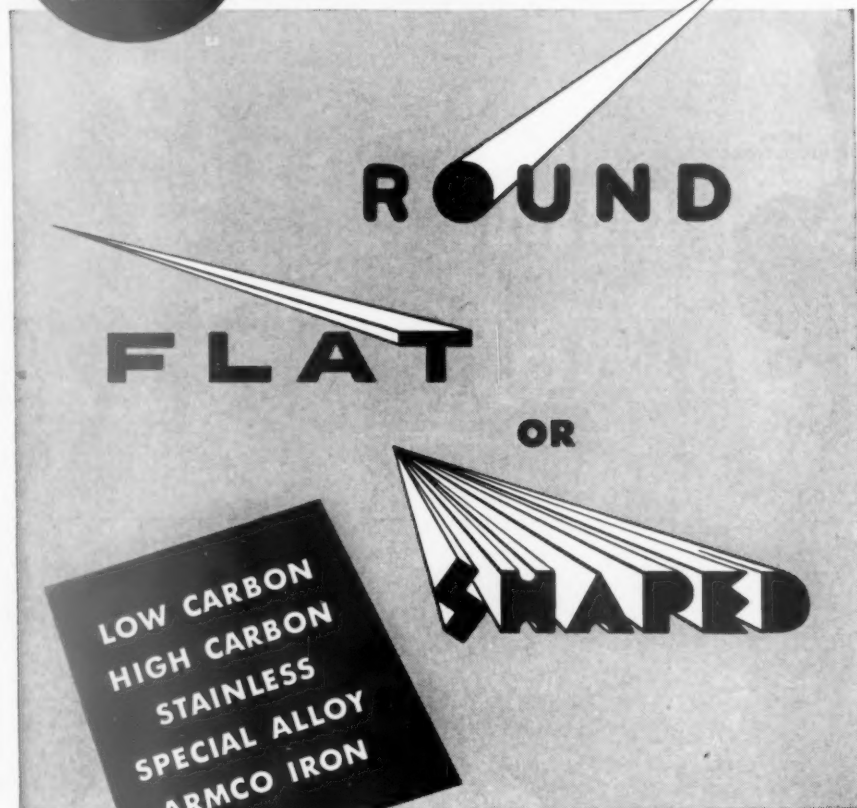
Use Master power drives to increase the salability of your motor driven products . . . improve the economy, safety and productivity of your plant equipment. They're the horsesense way to use horsepower.



THE MASTER ELECTRIC COMPANY • DAYTON, OHIO



PAGE Manufacturers' Wire



PAGE makes them all
YOU draw the Shape...
PAGE will draw the Wire

Cross-sectional areas up to .250" square;
widths up to 3/8"; width-to-thickness ratio
not to exceed 6 to 1.

Tell us the way you want it. We'll follow
your specifications.

Write or wire today



**Page Steel and Wire Division
AMERICAN CHAIN & CABLE**

Monessen, Pa., Atlanta, Chicago, Denver, Detroit,
Los Angeles, New York, Philadelphia, Portland,
San Francisco, Bridgeport, Conn.

plus
**Welding
Electrodes
Wires
Rods**

For More Information Circle No. 603 on Inquiry Card—Page 17

Reading Tube Corp., New York City,
has opened a new distribution depot in
Cleveland.

Woodrow D. Johnson has been pro-
moted to general sales manager of all
textile division products for **United
States Rubber Co.**, New York City.

Robert Barge has been named sales
representative for the Industrial Di-
vision of the **Durkee-Atwood Co.**, Min-
neapolis, Minn. He will cover northern
Ohio and western Pennsylvania.

The Hydraulic Press Mfg. Co.,
Mount Gilead, Ohio, has named Bruce
H. Lowe an H-P-M sales engineer. He



Bruce H. Lowe



Elton W. Turner

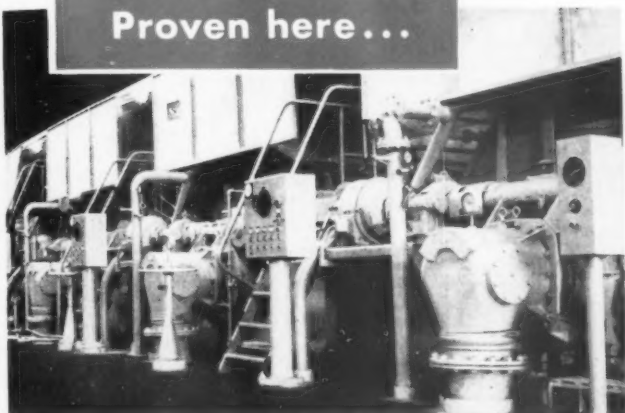
has been attached to the Detroit dis-
trict sales office. Elton W. Turner, an-
other sales engineer, has also been
assigned to Detroit.

Raymond H. Dobberfuhl has been
appointed manager of the new May-
wood, Calif., office and warehouse of
the **R. & J. Dick Co., Inc.**, Passaic, N. J.

The Enterprise Mfg. Co., Philadelphia,
has named Nevius & Echternach, At-
lanta, Ga., as representatives in North
Carolina, South Carolina, Georgia,
eastern Tennessee and Alabama. They
also announced that Simpson & Co.,
Memphis, Tenn., will be representatives
in Arkansas, Louisiana, Mississippi and
western Tennessee.

UNOBA —

Proven here...



To combat continuous conditions of heat, water, pressure and chemical action in its sulphate pulping operation, St. Helens Pulp & Paper Co. specifies New UNOBA.

Mud, water and highball operations haven't caused a single failure of New UNOBA-lubricated front wheel bearings on the "Eucs" at MKM's Lowell Dam Project.



Proven here...

Greases, like the equipment they help keep rolling, are proven in the field. To secure conclusive evidence of its superiority, samples of *New, Improved* UNOBA were tested during the past two years in widely varying industrial applications...on almost every conceivable type of



No prop shaft bearing failures or leakage, even when towing's toughest, report Shepard Towing Co. of St. Helens, Oregon, users of New UNOBA.



...Proven here!

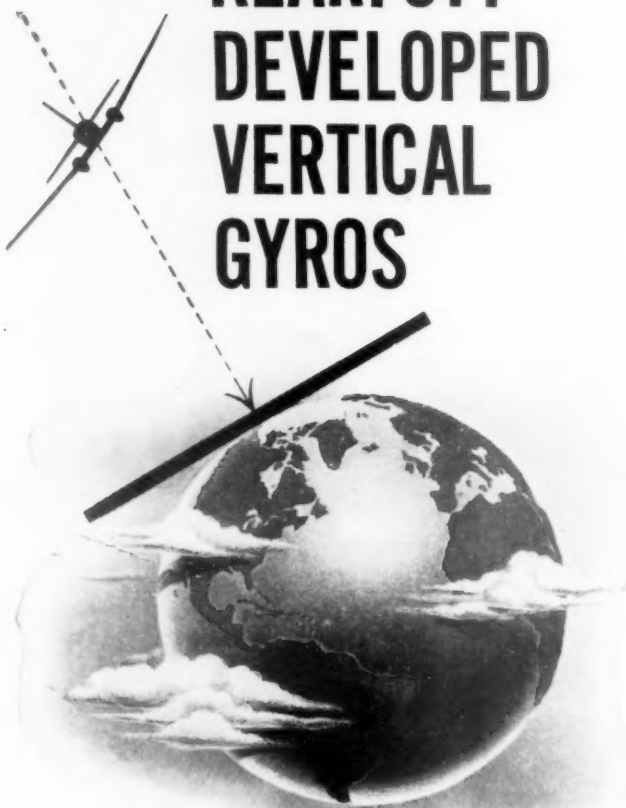
machinery and equipment. Results of these field and storage tests from California's Mojave Desert to the Alaskan Arctic...from logging camps in the Cascade Mountains to the Pacific fishing fleets...have more than satisfied Union's exacting product-development men.

UNION OIL 76 COMPANY OF CALIFORNIA

Los Angeles: Union Oil Bldg. • New York: 45 Rockefeller Plaza • Chicago: 1612 Bankers Bldg. • New Orleans: 644 National Bank of Commerce Bldg. • Atlanta: 401 Atlanta National Bldg. • Kansas City, Mo.: 921 Riello Bldg.

For More Information Circle No. 605 on Inquiry Card—Page 17

KEARFOTT DEVELOPED VERTICAL GYROS



...in production

KEARFOTT vertical gyros providing continuous vertical reference within two minutes of arc under bench conditions typify the engineering knowhow and production skills available to you in the field of precision gyros for airborne control applications.

Designed for particular applications with stringent performance requirements, a wide variety of vertical gyros now in production are being used extensively in aircraft and missile control systems demanding the most precise gyro reference obtainable.

Kearfott gyros incorporate many unique features permitting operation under extreme operational or environmental conditions. A true hermetic seal in dry inert gas provides positive environmental protection. Synchro pick-offs and rigid structural elements assure performance during adverse conditions of vibration or shock.

TECHNICAL DATA SHEETS

Complete technical data in tabular form on Kearfott Precision Vertical Gyros are available on request. Send for copies for your files. Write today.

KEARFOTT COMPONENTS INCLUDE:

Gyros, Servo Motors, Synchros, Servo and Magnetic Amplifiers, Tachometer Generators, Hermetic Rotary Seals, Aircraft Navigational Systems, and other high accuracy mechanical, electrical and electronic components.

Technical Data on these and other components is available on request.



KEARFOTT COMPANY, INC., LITTLE FALLS, N. J.

Sales and Engineering Offices: 1378 Main Avenue, Clifton, N. J.
Midwest Office: 188 W. Randolph Street, Chicago, Ill. South Central Office: 6115 Denton Drive, Dallas, Texas
West Coast Office: 253 N. Vineland Avenue, Pasadena, Calif.

A GENERAL PRECISION EQUIPMENT CORPORATION SUBSIDIARY

For More Information Circle No. 606 on Inquiry Card—Page 17

Danly Machine Specialties, Inc., Chicago, has named Harold J. Staehle as Chicago district sales manager. Also, Arthur E. Lang was appointed branch manager at Rochester, N. Y., and Joseph C. Eppich takes over as assistant branch manager at Cleveland.

The Stronghold Pacific Corporation, Downey, Calif., has changed its name to the Olympic Screw & Rivet Corporation.

Clark M. Brown has been made district sales manager, Kansas City Division, for the Metal Goods Corp., St. Louis, Mo.

Melvin Schwartz has been appointed general sales manager for the Garfield Wire Division of the Overlakes Corp., New York City.

The new general sales manager of the new Products Division, Corning Glass Works, Corning, N. Y., is Campbell Rutledge, Jr.

The Aircraft Division, Clary Multiplier Corp., Los Angeles, has named Standard Products Corp., Wichita, Kan., as representatives for Kansas, Oklahoma and Missouri.

Gar Wood Industries, Inc., Wayne, Mich., has appointed David Byrd as sales manager of the Richmond Division, Richmond, Calif.

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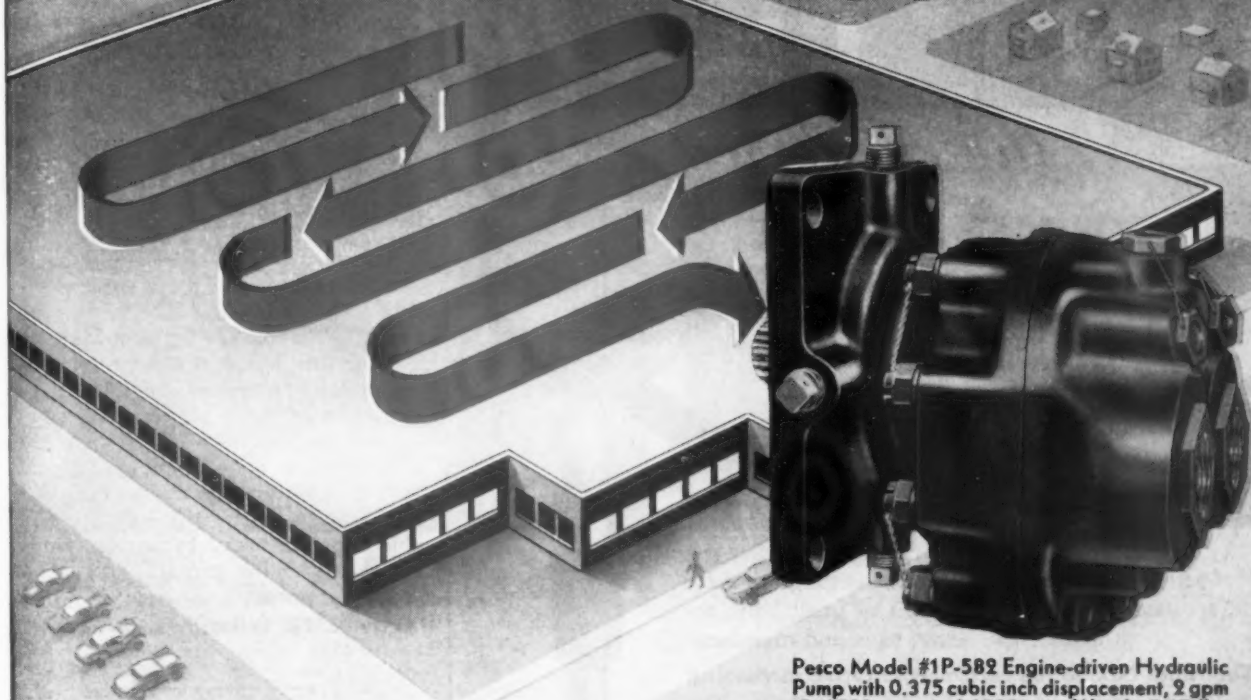
Brainard Steel Announces New Strapping Tape

A first-of-its-kind service designed to simplify industry's packaging and materials-handling operations has been announced by Brainard Steel Division of Sharon Steel Corporation, Warren, Ohio, manufacturers of the Brainard Steel Strapping System. The company's strapping system has now been expanded to include a complete line of strapping tapes, both pressure-sensitive and gummed, as well as dispensers for all applications. The new products will carry the brand name of "Brainard Strapping Tape".

The new tapes are filament-reinforced to provide high tensile strength, and are designed to strapping applications.

According to company officials, the use of steel strapping has grown tremendously in recent years, yet strapping tapes have a definite place in the packaging field. By offering both steel strapping and strapping tapes, the company can offer a packaging service more complete than anything before available, and is also in position to give completely unbiased recommendations.

Pesco geared to solve your pump problem



Pesco Model #1P-582 Engine-driven Hydraulic Pump with 0.375 cubic inch displacement, 2 gpm @ 1500 psig and 1500 rpm. Weight 5.65 lbs.

Take advantage of the outstanding and complete Pesco facilities for engineering, testing, and volume production of a pump to fit your specific installation.

PESCO ENGINEERING, with 20 years of experience and "know-how" in pump design and application will provide you with the one best component for your requirements.

PESCO RESEARCH AND DEVELOPMENT TESTING will insure your component of "performance-proved" efficiency and long operating life.

PESCO PRODUCTION builds into each unit uniform high precision and quality, assuring maximum performance and dependability.

If you need pumps, motors, or accessory units for fuel, hydraulic, or air applications, contact Pesco. All the advantages of Pesco experience, engineering, and production are at your service. Simply call or write the Home Office, Bedford, Ohio.

YOU CAN RELY ON PESCO *Pressure Loaded* PUMPS

FOR THESE ADVANTAGES

DEPENDABLE PERFORMANCE
LESS INSTALLATION SPACE
REQUIRED

LOWEST LIFETIME COST

Call or write the Home Office, Bedford, Ohio for full information on these outstanding Pesco products.

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|-----------------|---|------------------|
| HYDRAULIC PUMPS | • | AIR PUMPS |
| FUEL PUMPS | • | HYDRAULIC MOTORS |
| POWER PACKAGES | • | ELECTRIC MOTORS |



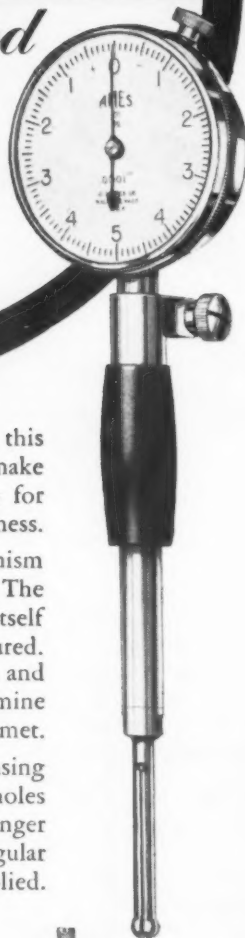
BORG-WARNER CORPORATION
24700 NORTH MILES ROAD • BEDFORD, OHIO

AMES

... the Preferred

FOR FAST, ACCURATE
INSPECTIONS

Small Hole Gauge
No. 36



Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The Ames No. 36 has extremely sensitive mechanism especially designed to eliminate "feel" in measuring. The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

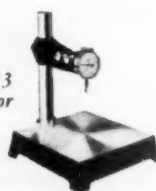
The operator has only to slide the contact in and around the hole and note the readings to determine if tolerances are being met.

The Ames Small Hole Gauge No. 36, using contacts in increments of $1/32$ ", can check holes of $3/16$ " to 1" diameter, up to 2" depth. Longer lengths and special contacts to check irregular recesses, splines, etc., can be supplied.

Ames No. 15
Jaw Gauge



Ames No. 13
Dial Comparator



Ames No. 516
Dial Micrometer



Ames No. 25
Pocket Thickness
Measure



If you would like to have our recommendations on your measurement problem, send blueprints and specifications. Write for your free copy of catalog on Ames precision measuring instruments.



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principal cities.

B. C. AMES CO.

31 Ames Street
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Mfg. of Micrometer Dial Gauges • Micrometer Dial Indicators

For More Information Circle No. 608 on Inquiry Card—Page 17

ADDITIONAL CASE HISTORIES

Gummed Tape Usage Cut 30%



To insure quick handling of parts requirements, packaging materials must be used which are both efficient and labor saving, according to the Austin Motor Co. By using a high quality gummed tape, the company found that its extreme adhesiveness has cut tape usage by 30% with a subsequent saving in cost. In addition, saving excess time in preparing each shipment has enabled the company to handle parts shipments more rapidly and in a greater number.

Circle No. 295 on Inquiry Card—Page 17

"Disappearing" Adhesive Lowers Assembly Costs

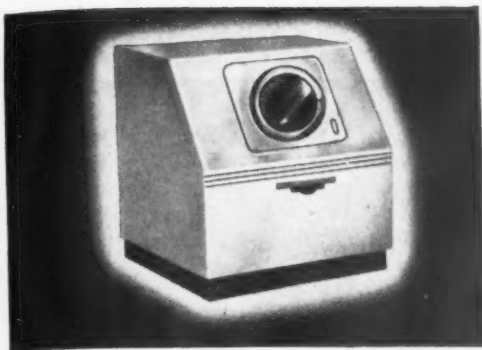


A "disappearing" adhesive permits assembly of a three-piece oil ring, made by the Muskegon Piston Ring Co., to auto engine pistons at reduced cost. The adhesive dissolves after initial engine operation permitting independent operation of the three component rings. In addition to being as easy to assemble as a less efficient single cast ring, chrome plated ring edges can be obtained at lower cost with the three-piece ring.

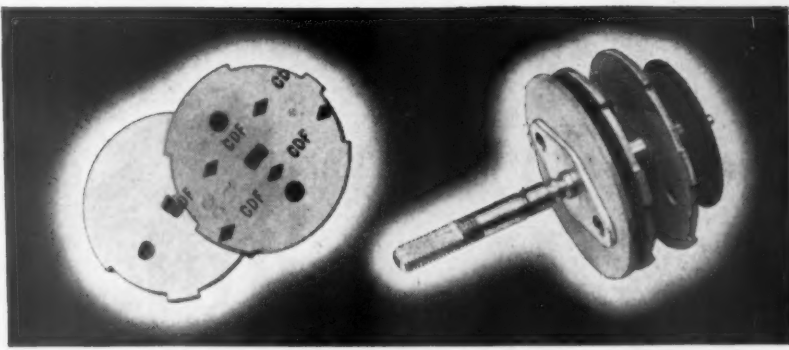
Circle No. 296 on Inquiry Card—Page 17

For More Information Circle No. 609
on Inquiry Card—Page 17→

PURCHASING

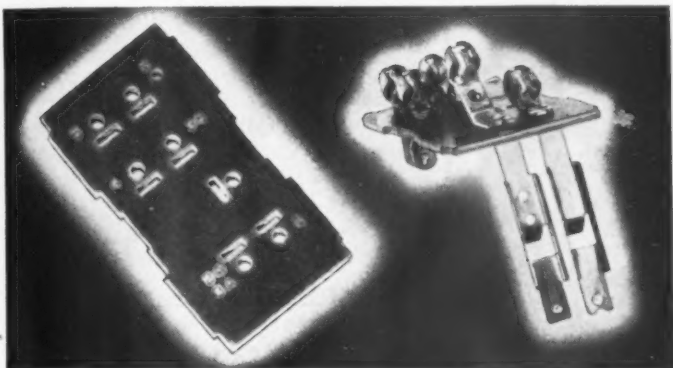


What makes the miracle of automatic washdays? What gadget turns water on and off; starts spinners, agitators, fans; regulates heat . . . all on a precise timing schedule? Chances are it's a P. R. Mallory timer switch.

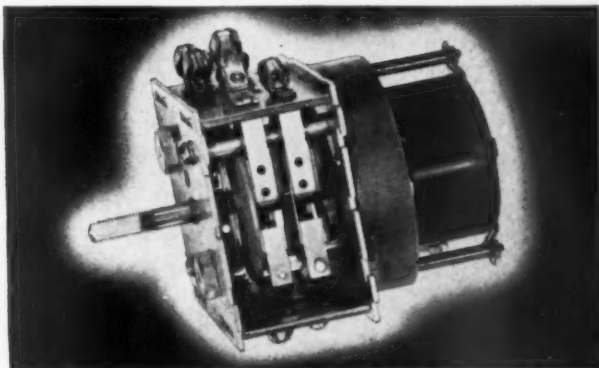


Special paper-base Dilecto laminated phenolic cams are the heart of the switch. If the corners are not sharp, if tolerances are not held, if the laminated plastic fails,

the timing schedule would go haywire. But it doesn't happen with Dilecto cams fabricated by C-D-F, now definitely identified for performance comparison.



C-D-F also supplies these Dilecto insulating side boards. Dilecto Grade X-13 was chosen for its ability to withstand severe riveting and staking impact, for its sturdiness in holding up under the strain of plugs being inserted and removed from terminals mounted on the board.



Look inside the smart, small, tough Mallory timer switch. The shaft revolves; with the switch operated by a manual clock which is wound or set whenever the switch is turned over to complete the entire cycle. Switch accuracy depends entirely on the degree of accuracy in which the cam is manufactured.

C-D-F and DILECTO® LAMINATED PLASTIC helped Mallory improve design . . . simplify purchasing . . . speed production

Two C-D-F Dilecto laminated plastic parts play small but vital roles inside P. R. Mallory's timer switches used to control the washing, drying, rinsing cycles.

Most important, the timing cams must be precisely fabricated to odd, notched shapes, with very close dimensional tolerances. In the design stage, it was first thought that there was no practical way to obtain the desired pieces.

But engineering-supplier teamwork always pays off. Good basic design . . . a quality material from an alert, interested fabricator . . . selective purchasing resulted in a solution.

C-D-F WORKS WITH DESIGNERS

A father and son team, in Mallory's Switch Division, Arthur and Harry Hall, began 15 years ago to make this timer switch. Cam material after material was tested . . . none worked satisfactorily.

C-D-F sales engineer Robert Tappan was called in. He says, "After 18 months, the design was adaptable to Dilecto laminated plastic. The first cam did not work, but showed promise. Looking back, it was a crude punching compared to the ones now furnished by the C-D-F Valparaiso plant."

A BIG, RELIABLE SOURCE

Mallory makes thousands of timer switches, naturally has several suppliers for laminated plastic insulation. But C-D-F keeps working hard to further improve the product: Special tools have been designed to increase

the accuracy of C-D-F cams, to provide Mallory with lower rejection rates. Resin-penetrating and laminating techniques have improved Dilecto grades. Inspection and quality control have been modernized.

When you have a problem in laminated plastics, think of improved, Dilecto and C-D-F. Send us your print for technical advice and quotation. Write for free test samples. The C-D-F catalog is in Sweet's Design File and the IRE Directory. Best of all, call your C-D-F sales engineer . . . He's a good man to know!

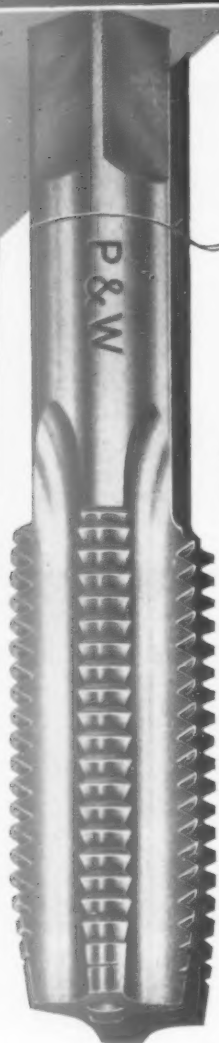


Continental-Diamond Fibre

CONTINENTAL-DIAMOND FIBRE COMPANY

NEWARK 41, DELAWARE

For More Information Circle No. 611 on Inquiry Card—Page 17



**NOW
IN STOCK**

*Ready for
prompt shipment!*



"CGH"
COMMERCIAL GROUND HIGH
TAPS

Now you can get . . . from stock and at standard prices . . . Pratt & Whitney "CGH" Commercial Ground Thread High Limit Taps made to a higher tolerance range to take full advantage of the expanded tolerances established by the new Unified and American Screw Thread specifications. **MORE HOLES PER TAP — LESS COST PER HOLE.** Regularly furnished styles are listed in P & W Catalog No. 17 as No. 103, No. 104 and No. 106.

For complete information, send for your free copy of the pamphlet "TAPS AND DIES FOR UNIFIED AND AMERICAN SCREW THREADS." Write on your Company letterhead to the Pratt & Whitney Branch Office nearest you or direct to West Hartford.

PRATT & WHITNEY

DIVISION NILES-BEMENT-POND COMPANY

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MACHINE TOOLS • CUTTING TOOLS • GAGES

*OFFICE ONLY

Planned Lighting Boosts Output by 25%



Planned lighting boosts light output 25% and cuts maintenance costs in modern Research Center of S. C. Johnson & Son of Racine, Wis. Labor costs of \$1.00 for each burned out lamp replaced are reduced by changing lamps on a regular schedule and modifying skylights to permit easier access by electricians. Better lighting obtained by using 133 watt bulbs instead of 100 watt is in effect a free bonus.

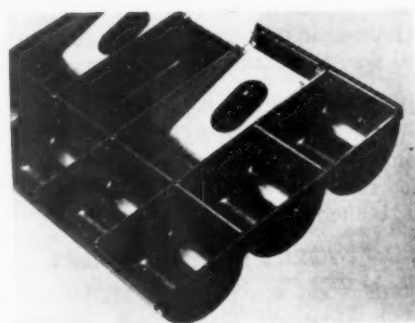
Circle No. 297 on Inquiry Card—Page 17

Continuous-Cast Bronze Cuts Reject and Scrap Losses

Manufacturing bronze bushings from standard 12" sandcast cored bronze bushing stock was presenting problems in losses from rejects and short-end scrap for Schaefer Machine Co., Inc., Brooklyn, N. Y. Cutting 5" bushings, for instance, from 12" stock left 2" scrap. Using continuous cast bronze, however, the firm could use multiples of the 5" length with allowance for saw cuts. In addition, elimination of sand, dirt or dross avoided soft and hard spots, thus improving machining.

Circle No. 298 on Inquiry Card—Page 17

Cash Drawers Now Made in One Piece; Formerly Were Assembled



Krauth & Benninghofen of Hamilton, O. has reduced assembly costs by manufacturing one piece

For More Information Circle No. 612
←on Inquiry Card—Page 17

cash drawers from molded phenolic plastic. Previously the drawer was made by assembling individual metal stampings. Reportedly, the plastic drawer also has a better appearance and greater capacity with reduced overall size. This firm had previously been the first to manufacture a portable autographic register case in plastic.

Circle No. 299 on Inquiry Card—Page 17

Electric Salt Bath Furnace Cut Rejects from 10% to Zero



Woodworking tools such as router bits, shaper cutters, etc., made by Virginia Machine Tool Co., Bassett, Va., are being produced with fewer rejects and at a substantial saving. In addition to eliminating the reject problem, the salt bath furnaces have reduced finish grinding by 50% because scale formation has also been eliminated. With the problem of rejects solved and the lower finish grinding, the company has reduced its stock allowance (18-4-1 stock) by 10%.

Circle No. 300 on Inquiry Card—Page 17

Deoxidized Iron Eliminates Grinding Automotive Casting

A foundry, troubled with hard spots on the surface of automotive castings, employed 11 men in their grinding room to remove the hard areas. Changing to deoxidized iron eliminated almost all of the grinding and allowed the parts to move directly to the machine shop. The iron also enabled the machining speed to be increased from 270 to 330 surface feet per minute and increased tool life on a finished boring operation by 35%.

Circle No. 301 on Inquiry Card—Page 17

**Use Inquiry Card—Page 17
For More Information on All
Products in This Issue**

For More Information Circle No. 613
on Inquiry Card—Page 17→

ESTABLISH YOUR OWN BUREAU OF STANDARDS

with this **PRATT & WHITNEY** *System*



THE ULTIMATE IN

Precision **GAGE BLOCKS**

BEST because they're —

- **MORE ACCURATE**
in SIZE
FLATNESS and
PARALLELISM
- **HARDER**
— to resist wear
and preserve accuracy
- **MORE STABLE**
— for more dependable accuracy
under all conditions.
- **WIDE SELECTION . . . HOKE and
USA Styles in SOLID CARBIDE or
STEEL**
— obtainable in a variety of sets,
or individually as replacements.



ACCURACY CONTROL

Electrolimit **MILLIONTH COMPARATOR**

BEST because it provides —

- **DIRECT READING** to .000001"
- **110,000X MAGNIFICATION** and
an 11" SCALE
— for fast, easy, accurate
reading.
- **HIGH PRECISION** and **EXCELLENT
REPEATABILITY**
- **EXCLUSIVE RECORDING DEVICE**
— gives a permanent record
of each block tested.
- **ELECTRO-MECHANICAL
MEASUREMENT** plus
ELECTRONIC MAGNIFICATION
— the time-tested and proven
P&W Electrolimit principle.

First Choice



for Accuracy

PRATT & WHITNEY

DIVISION NILES-BEMENT-POND COMPANY

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Please send my ☐ No. 481-3, Electrolimit External Comparators
free copies of the ☐ No. 545, Steel Precision Gage Blocks
following circulars: ☐ No. 532-1, Carbide Precision Gage Blocks

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MACHINE TOOLS • CUTTING TOOLS • GAGES

LOOK TO **DETREX** FOR



If you're satisfied with
any other paint base
You don't have the facts about

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Paintbond

HOW PAINTBOND EXCELS:

By improved paint base: Paintbond provides greater permanence to your paint finishes than any comparable phosphate coating process . . . you can prove this with your own salt-spray tests! Even when paint is scratched through, corrosion is confined to the exposed metal; spreading corrosion, and resulting paint flaking and peeling, is prohibited!

Further, since Paintbond consists of much finer-grained crystalline structure, it imparts a smoother, more lustrous finish to your products. At the same time, paint is securely interlocked with the metal for extreme durability.

By dollar savings: It is an easily proven fact that Detrex Paintbond will coat a substantially greater surface area per drum of compound, or will provide a heavier coating with the same amount of compound. This means important dollar savings for you. Since Paintbond goes further and is easier to control in solution, you enjoy maintenance savings, too.

By flexibility: Whether applied by spray or immersion, Paintbond can easily be controlled to give exactly the coating weight and crystal size you desire. This important advantage spells satisfaction on every type of product and application.

By added merchandising value: Detrex makes available to Paintbond users an attractively designed sticker for application on their finished products. At point of sale, this sticker becomes another sales clincher for your product as it informs the customer of the life-time, rust-free paint finish that Paintbond provides.

Paintbond IS different . . . the benefits above are but a few reasons why. Like all Detrex processes, results are fully guaranteed. You can get *all* the facts by using the coupon below . . . do it today for better paint finishes at lower cost tomorrow.

Please send us complete facts about Paintbond and how it will improve our finishes while cutting our costs.

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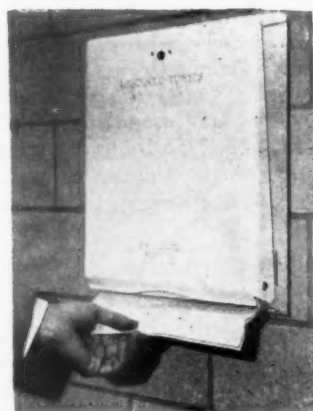
DETREX

CORPORATION

DEPT. PB-112, BOX 501, DETROIT 32, MICH.



Cuts Paper Towel Usage 50%



New refinements in controlling the wet strength of paper towels has brought considerable savings to one of the country's leading manufacturers. Using paper towels developed for hard use, the company has found that they have stabilized absorbency and can be bought in economical quantities due to retention of freshness regardless of age. Also, controlled processing has prevented stored towels from becoming more respondent to acid or alkaline reactions.

Circle No. 302 on Inquiry Card—Page 17

Shatterproof Jet Aircraft Tank 35% Lighter Than Steel Model



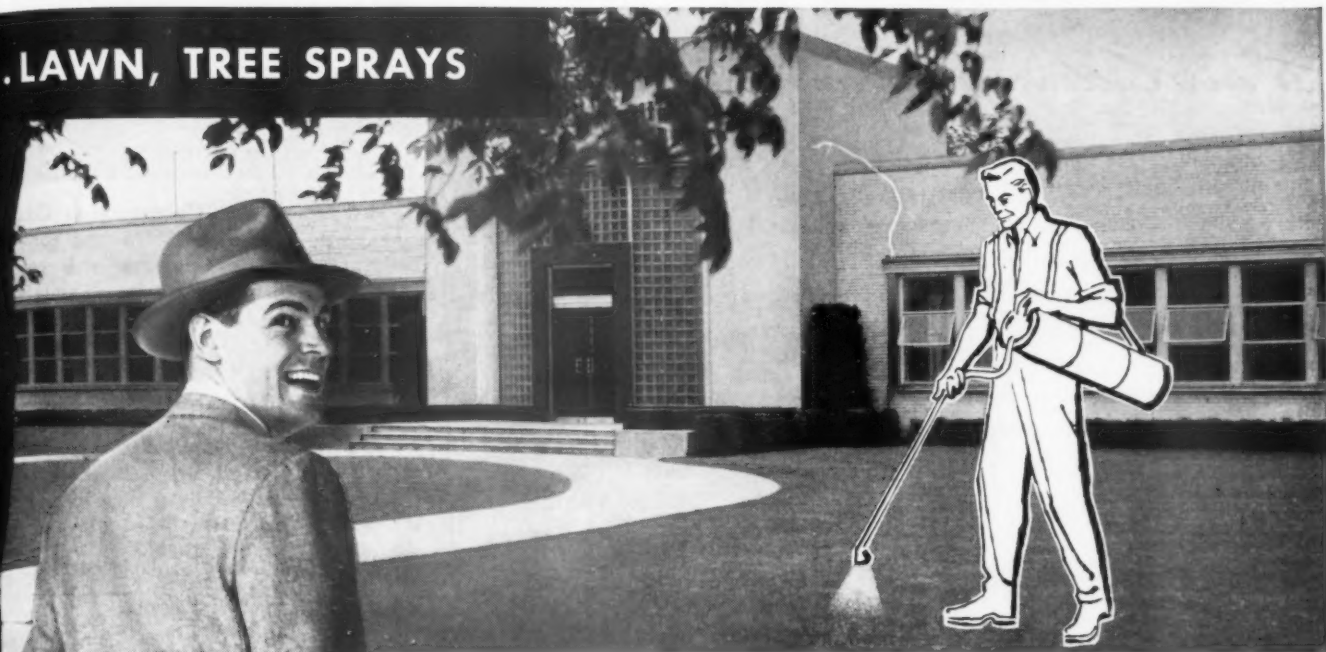
Shatterproof jet aircraft starter tanks developed by Bendix Aviation and Apex Electrical Mfg. Co. have been made 35% lighter than the conventional steel tank by the use of fiberglass impregnated with epoxy resin. It is made by winding a glass roving impregnated with epoxy resin around a low-melting alloy mold. The new tank has a burst strength of 7,000 psig compared to operating requirements of 3,000 psig.

Circle No. 303 on Inquiry Card—Page 17

For More Information Circle No. 614
←on Inquiry Card—Page 17

it, for easier plant upkeep!

...LAWN, TREE SPRAYS



See your S.O. Industrial Salesman!
when you need products for floor, tree,
lawn care . . . insect and weed control

That's right! The same man who brings you cutting and lubricating oils now handles a complete line of maintenance products for your convenience. Order "the works" from him, and keep your plant performing and looking its best, inside and out, with these fine quality products by Standard.

Remember: For easier, more efficient plant maintenance, the man to see is your familiar Standard Oil Industrial Salesman. He's ready to be of service anytime. Just give him a call. Remember, too, fast delivery service from hundreds of well-stocked warehouses all over the Midwest.



STANDARD OIL COMPANY (INDIANA)

MAY, 1954

For More Information Circle No. 616 on Inquiry Card—Page 17

371

BUSINESS IN MOTION

To our Colleagues in American Business...

For many years the electrical industry has been asking for larger and larger generators, in order to meet the tremendous growth in demand. However, two limitations have been imposed upon generator output. One is physical size, which is limited by the dimensions of railroad tunnels and bridges. The other is the problem of heat dissipation. Temperatures within the generator must be held down to avoid damage to insulation. Cooling the stator is not too great a problem, but removing heat from the spinning rotor is not easy. In the conventional design, heat flows from the copper rotor coils through the insulation to the steel rotor body, from which it is removed by a blast of air or hydrogen.

Since the insulation is a formidable barrier to heat as well as to electricity, it became evident long ago that some way should be found to cool the rotor coils directly instead of indirectly. Various methods were tried, with varying success. New and successful designs make use of extruded copper shapes. The shapes fit together in such a manner as to form hollow copper conductors for the rotor coils.

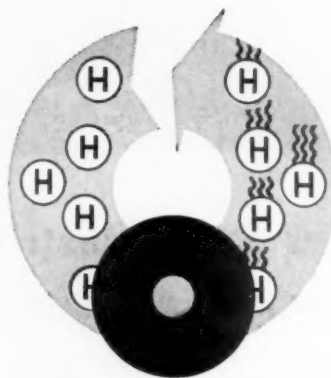
The idea was fundamentally simple, but as is so often the case, reducing it to practicality was not easy. Some said the

shapes could not be extruded. Revere, however, tackled the problem, and collaborated closely with the generator designers over a period of months. Finally all requirements were adjusted, and production began. Specifications for the shapes are tight. They are extruded, drawn, and straightened. Tolerances are close. Finish is important, since irregu-

larities would damage the insulation. Special techniques were found to make 90-degree bends in the shapes, to complete the coils. Today generators embodying these designs are in successful operation. This is another marked advance by the electrical industry, which has consistently achieved greater efficiency, lower costs, and cheaper power.

One of the important things to remember about this development is that ways were found to overcome all handicaps. Close collaboration among many men on both sides did the trick.

If you have an idea for product improvement, or a new product, let us suggest that you search among your suppliers for advice. If one says it can't be done, perhaps another may say it can, given mutual adjustments. Just realize that the difficult is not necessarily the impossible; it may just take a little longer.



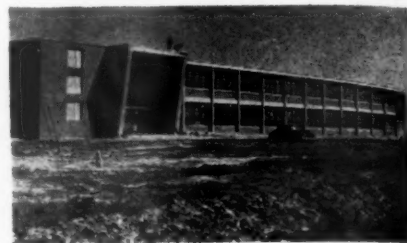
REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.

SEE "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS

Plywood Concrete Forms Save In Re-Use Value



The East Coast Construction Co., Jacksonville, Fla., has realized considerable savings through the re-use of plastic-faced plywood panels as concrete forms. Double-faced panels were used 20 times on each side and the contractor sees an additional 15 for them. Plywood gives a smoother surface to the finished concrete surface, does not splinter or rough up and is generally more economical than building forms from lumber stock.

Circle No. 304 on Inquiry Card—Page 17

Steel for Cam Machines 25% to 30% Easier, Halts Tool Wear



Makers of the Ferguson roller gear drive were faced with high cutter-breakage in machining steel for their cams. Using a graphitic tool steel, they found their machining improved by nearly 30% and considerable lowering of cutter-breakage. In addition, the new steel showed no distortion in heat treating and gave good surface wear. Some cams have been in continuous usage for 40,000 hours running time.

Circle No. 305 on Inquiry Card—Page 17

Mill's Transmission Belt Life Is Doubled

Just by changing belts, a mill has found considerable savings due to the fact that the new belt lasts twice as long as previous ones. With stretch reduced 50%, the belt grips better and thus will handle heavier (Please turn to page 376)

For More Information Circle No. 617 on Inquiry Card—Page 17

MAKE THIS "ONE SWEEP" TEST YOURSELF!

See how **BLUE RIBBON** Gummed Tape
Seals Faster . . . the first time down!



Stop-action photo proves Blue Ribbon seals with just one fast sweep of your packer's hands. Tests show an 18" carton center-strip is perma-sealed in 1.4 seconds. Proof positive of Blue Ribbon's instant action.

Try this test yourself. We'll guarantee Blue Ribbon Super Standard sealing tape will close cartons and packages as fast as your operator's hands can move . . . and they are perma-sealed, ready to take the toughest stresses of all-condition shipping.

Figure the increased production you will get with a tape that goes down faster—users* report as much as 25% greater output . . .

stays down to last—with no rerubbing or re-sealing. Figure the savings you'll make, too.

You count on consistent good quality with Blue Ribbon . . . insured by 'pines to paper' control of the world's finest kraft . . . you get the same fine tape as you did on your last order—your next order—or a hundred orders after that!

*Names on Request

ANOTHER PRODUCT BY

Hudson

Blue Ribbon Super Standard Gummed Tape is another Hudson Quality Product . . . a member of the renowned family of Hudson Paper Napkins, Tissues, Towels, Orange Core Gummed Tape, Kraft Wrapping Papers, Grocery and Heavy Duty Bags, Multiwall Sacks and Laminated Wrapping Papers.



Super Standard Tape

Napkins

Gummed Tape

Kraft Wrapping Paper

Grocery Bags

Multiwall Sacks

P.S.

Prove it yourself!

Send us your name on your company letterhead. We'll give you a free trial roll of Blue Ribbon tape, and a copy of "How To Cut Costs In Your Shipping Room."

HUDSON PULP & PAPER CORP.

Dept. P5-A, 477 Madison Avenue
New York 22, N. Y.



P. A. needs
Solder



I've got to
have Babbitt



I'll need
some Brass



We'll want
Anodes and
Lead



Requirement:
Aluminum and
Magnesium



Requirement:
Die Casting
Metal

Are you one of these?

If you are, your source is Federated Metals . . .
for one or for all non-ferrous metals.

Federated, a division of American Smelting and Refining Company, is a nationwide organization with 14 plants and 24 sales offices for better service and faster delivery.

See Federated First for all Non-Ferrous Metals.

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In Canada: Federated Metals Canada, Ltd., Toronto and Montreal

Aluminum, Magnesium, Babbitts, Brass, Bronze, Anodes, Zinc Dust,
Die Casting Metals, Lead and Lead Products, Solders, Type Metals



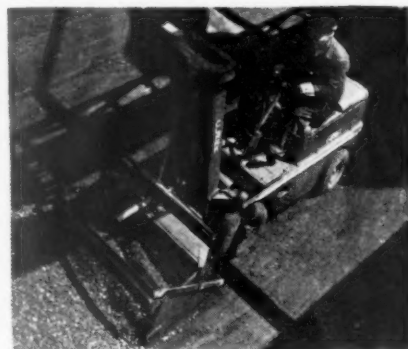
For More Information Circle No. 621 on Inquiry Card—Page 17

(Continued from page 372)

loads. With less stretch, fewer take-ups are needed, so maintenance costs are down, too. With fewer interruptions, the mill has increased production by working during what used to be "repair time".

Circle No. 306 on Inquiry Card—Page 17

Fork-Truck Furnace Stoking Saves 96 Man-Hours Weekly



A fork-truck with a shovel attachment for transporting and handling coal for furnaces is saving Union Steel Products Co., Albion, Mich., the cost of 96 man-hours per week. The 4000 lb. capacity truck, equipped with a 15 cu. ft. shovel, is used with one operator to stoke the firms furnaces 24 hours a day. The unit transports the coal from outside storage areas to the companies boiler rooms much faster than previous hand methods.

Circle No. 307 on Inquiry Card—Page 17

Steel Strapping Saves \$500 in Accident



Strapping a load of refractory brick to pallets on a truck-trailer saved the Kaul Clay Products Co. of Clermont, Pa. \$500 when the truck overturned in soft snow. Although the force of impact twisted the coupling 90°, the 26,000 lb. load remained intact and was readily transferred to another truck.

Circle No. 308 on Inquiry Card—Page 17

Let our facilities Increase your Profits



Roll Formed can help you earn a bigger profit by making your fabricated parts better, faster and more economically. Put our production facilities and knowledge of metal shapes to work for you. We can form, bend, notch and punch your parts ready for final assembly. Regardless of whether your shapes are stainless, carbon steel, aluminum or copper clad metals, we will produce them to your specifications and deliver them as your production schedule demands. Discuss your metal shapes problems with us. We'll show you how to solve them economically.

ROLL FORMED PRODUCTS
COMPANY

MAIN OFFICE AND PLANT
3760 OAKWOOD AVE.
YOUNGSTOWN, OHIO

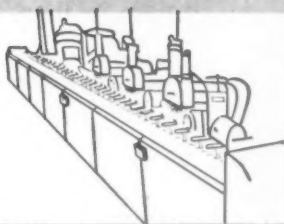
WRITE FOR CATALOG 1053

It includes information about standard and special shapes, lockseam and butt seam tubing.



POLISHING

We have complete modern facilities for degreasing, buffing and polishing your sections. Quotations upon request.



Here's where YOU should use

Tannate*

FLAT LEATHER BELTING



ON DRIVES WHERE YOU NEED MORE CAPACITY

Tannate with its high overload capacity is the economical way to get more production from your present equipment.

ON DRIVES SUBJECTED TO HEAVY SHOCK LOADS

— Tannate is resilient, absorbs heavy shock loads and acts as a cushion between motor and machine.

ON HIGH SPEED DRIVES

where belt speeds as high as 6,000 f.p.m. are required. Tannate can do a good job because it is comparatively light in weight — consequently centrifugal force is less effective.

ON MULTIPLE PULLEY DRIVES

Tannate is flexible — can take the twisting and turning of serpentine drives, mule drives and quarter turn drives — has a high coefficient of friction (on both sides of the belt) that maintains high operating efficiency.

**ON SHORT CENTER
AS WELL AS LONG CENTER DRIVES**

don't overlook the advantages of Tannate on short center drives. Although the Tannate short center drive usually does require a tension-controlling motor base for best performance, this means a constant, maintained RPM resulting in increased production capacity.

***What is Tannate?**

Tannate is a special tanned leather belt. It combines exceptional grip, pliability, elasticity, strength, and durability. It will resist moisture, mineral oils and the fumes of most acids — will withstand high temperatures. For specifications, write J. E. Rhoads and Sons, 35 North Sixth Street, Philadelphia 6, Pa.

RHOADS

INDUSTRIAL LEATHERS

PHILA. • NEW YORK • CHICAGO • ATLANTA

For More Information Circle No. 625 on Inquiry Card—Page 17

**Motor-Operated Shaker Cuts
Coal Car Unloading 62%**



A manufacturer of hydraulic fittings and accessories now empties coal cars with a motor-operated shaker that cuts unloading time by 62%. Formerly, two men were needed to unload a car in 8 or more hours. The mechanical shaker, operated by one man, does the job in 3 hours. Safety, also, is greatly increased since the workman is no longer required to enter the car.

Circle No. 309 on Inquiry Card—Page 17

Belt Has 14 Times Longer Life



Installation of neoprene belts has saved a Chicago construction firm nearly \$2000 through its longer flex life and resistance to sunlight, abrasion, gasoline and oil. Used for conveying wet concrete and other building materials, the belt is subjected to alternate wetting and drying. Previous belts required frequent cutting and replacement. Also, exposure to variations in temperature made ordinary belts brittle. A neoprene covered belt lasted 14 times longer and gave trouble-free operation until replaced.

Circle No. 310 on Inquiry Card—Page 17

**Ball Type Valves On Quenching
Lines Last 4 Times Longer**

Revere Copper and Brass, Inc., has found that ball type valves used on the quenching lines of their an-

(Please turn to page 384)

For More Information Circle No. 626 on Inquiry Card—Page 17→

20th Century

*the
persuasive
abrasive*

Whether your concern is castings, forgings or metal parts, make 20th Century *Normalized shot and grit a part of your straight-line production operation.

The high uniformity and greater durability of 20th Century *Normalized . . . the persuasive abrasive line . . . gives you maximum efficiency, increased economy . . . and a quality product.

Write for our new catalog No. 1153 today.

THE CLEVELAND

**Metal
Abrasive**

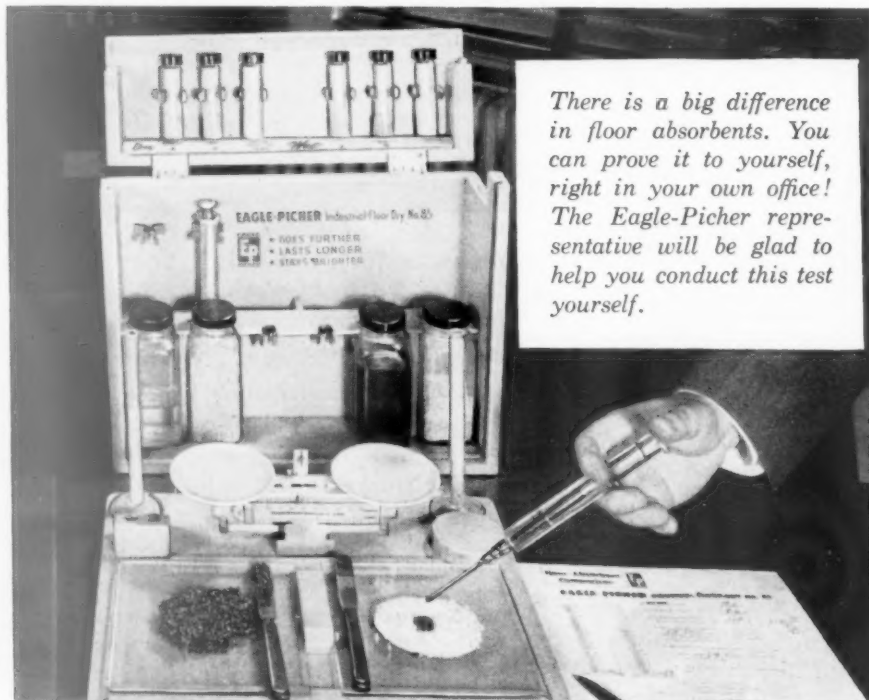
CO.

845 East 67th Street • Cleveland 8, Ohio
Howell Works: Howell, Michigan

*One of the world's largest producers of quality shot, grit and powder—Hard Iron—Malleable (*Normalized)—Cut Wire—Cast Steel (Realsteel)*

*Copyrighted trade name

20-minute demonstration saves Fafnir \$1,500 a year



Switching to Eagle-Picher Floor-Dry cuts costs 20% on floor absorbents

at The Fafnir Bearing Company

With this portable laboratory, Eagle-Picher Floor-Dry and the floor absorbent then in use were analyzed for The Fafnir Bearing Company, New Britain, Connecticut. The simple 20-minute comparison test proved that Eagle-Picher Floor-Dry would produce worth-while savings . . . savings that actually amounted to \$1500.00 the first year!

Here's what this demonstration shows:

- The amount of oil and water absorbed for given bulk.
- The cost of your absorbent in terms of absorption and coverage.
- The amount of coverage you're getting.
- The benefits of your absorbent in terms of safety and reflective ability.

You'll find that Eagle-Picher Industrial Floor-Dry is lightweight for exceptional coverage . . . light in color for brighter, safer working areas. It's insoluble, chemically inert and non-combustible. Write today for the full story.

EAGLE-PICHER INDUSTRIAL FLOOR-DRY No. 85



Since 1843

THE EAGLE-PICHER COMPANY

General Offices: Cincinnati (1), Ohio

For More Information Circle No. 629 on Inquiry Card—Page 17

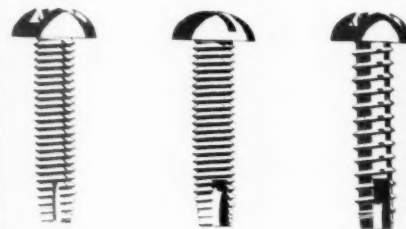


(Continued from page 380)

nealing furnaces have lasted four times longer than any previous valves. Opened and closed 60 times a day under 100 psi, the valves have provided a constant flow of unfiltered river water without costly maintenance or frequent replacement.

Circle No. 311 on Inquiry Card—Page 17

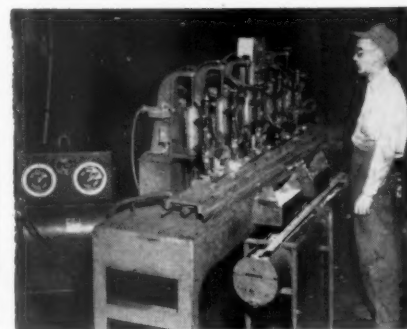
Tap Screws Speed Production, Need 50% Less Driving Torque



Three new type thread-cutting tap screws considerably cut production time. Flutes milled on both sides of the screw point give better cutting and chip clearance making it easier to drive the screws and substantially lower the danger of stripping. In addition, customer benefits are greater through closer bond with more resistance to vibration loosening.

Circle No. 312 on Inquiry Card—Page 17

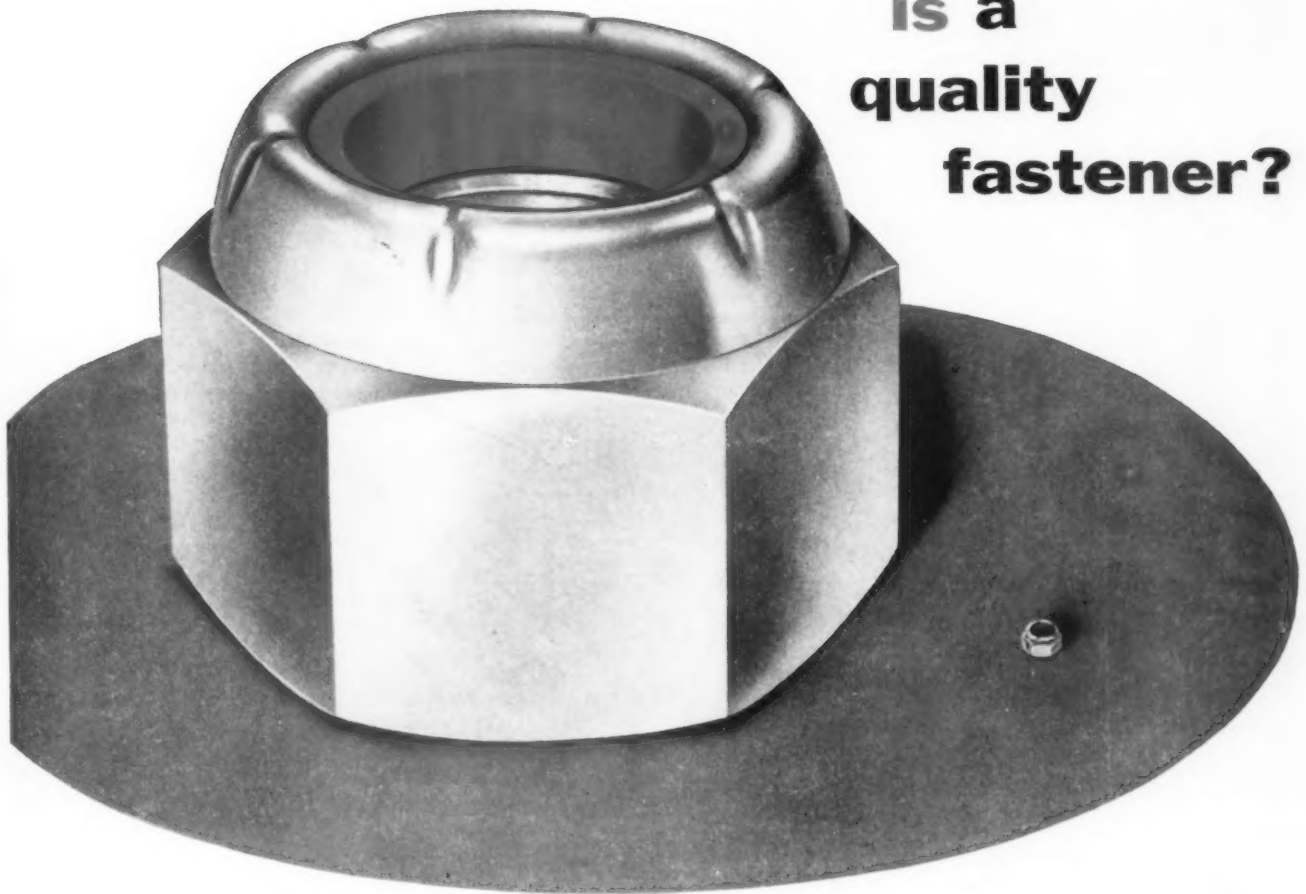
Stud Welding Improves Quality of Parts, Ups Production, Cuts Cost



Five-gun production units used at International Harvester's East Moline, Ill., plant turn out nearly 50 rasp bars per hour. Each rasp bar assembly uses ten studs to fasten the bar to reinforcing strips. The installation is done in 40 seconds through stud welding guns set as a production unit with a timing control to operate in series.

Circle No. 313 on Inquiry Card—Page 17

What size is a quality fastener?



Here are two ELASTIC STOP® nuts.

Each has the familiar red locking collar. Each is self-locking, vibration-proof and can be reused many times. Each is a fast, readily assembled one-piece unit . . . will maintain accurate adjustment anywhere on a bolt.

Each will afford positive protection against thread corrosion . . . prevent liquid seepage along bolts. Each is manufactured in quantity. Each is exactly controlled as to quality of raw material, finished dimensions, class of thread fit, seat squareness and finish. Each has a record for precision and uniformly high performance that is unmatched.

But . . . one measures 1 10 inch across the flats; the other, 4 inches. Between these two, there are more than 530 different hex nuts in the ESNA line. They are the result of variations in height, material, finish and size.

Look to ESNA for the top quality self-locking fastener that fits your need best.

ELASTIC STOP NUT CORPORATION OF AMERICA



Elastic Stop Nut Corporation of America
Dept. N58-515, 2330 Vauxhall Road, Union, N. J.

Please send the following free fastening information:

- ☐ ELASTIC STOP nut bulletin ☐ Here is a drawing of our product.
What self-locking fastener would you suggest?

Name _____ Title _____

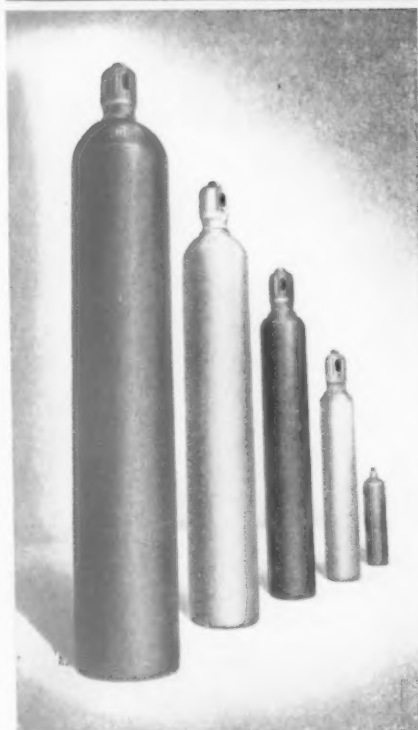
Firm _____

Street _____

City _____ Zone _____ State _____

For More Information Circle No. 632 on Inquiry Card—Page 17

HARRISBURG CYLINDERS FOR HIGH-PRESSURE GASES

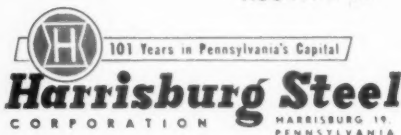


Buy with CONFIDENCE!

Yes, buy with confidence when you need cylinders for the storage or transportation of fixed, liquid, and medical gases in your plant... and buy from *Harrisburg Steel*, pioneer and world's largest manufacturer of seamless steel high-pressure gas cylinders made to I.C.C. Specifications.

Harrisburg Steel offers you the choice of a complete line, a complete range of sizes and capacities, in both domestic and export types... from 14 to 400 cubic feet. Orders from a few dozen to several thousand cylinders all receive prompt attention. Write for our Cylinder Catalog and current prices.

HSC-PA-1/54



For More Information Circle No. 633 on Inquiry Card—Page 17



LOWELL

Reversible Ratchet SOCKET WRENCH

Everything you need in a reliable socket wrench:

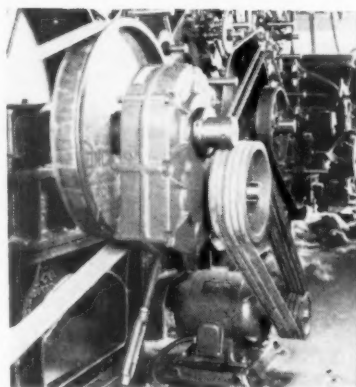
1. **Strength** from the great crushing action of special heat-treated steel pawls... high tensile alloy handle... cap is all steel, not cast.
2. **Safety** from its strength... also, socket is held securely by snap ring and can't slip.
3. **Speed** gained through ease of handling—there is no lost motion.

Send for catalog 60-A showing our full line.

LOWELL WRENCH CO.
WORCESTER 8, MASS.

For More Information Circle No. 634 on Inquiry Card—Page 17

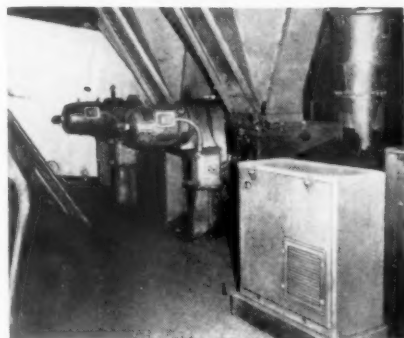
Valuable Space Saved



Installation of a shaft hung speed reducer and V belt drive saves valuable floor space for a woolen company. The reducer mounts directly on the driven shaft of a textile card and requires no foundation, sliding motor base or flexible coupling. In addition to space saved, faster installation and lower original cost is reported.

Circle No. 314 on Inquiry Card—Page 17

Adjustable-Speed Drives Speed Dried Coal Processing



All-electric adjustable-speed drives have increased the speed of processing of accurately dried coal for a major producer. The drives are used to control coal feed to the dryers. Screw-fed conveyors, at the bottom of the collecting bins, carry the coal to flash dryers. Exact moisture content can be controlled to give full production of accurately dried coal.

Circle No. 315 on Inquiry Card—Page 17

Protected AC Motor Reduces Stocking Problems

An air-conditioning equipment manufacturer substantially reduced the problems involved in motor inventory through the use of a new protected a-c motor. The motor, with its special protected enclosure, eliminated the need for stocking several types of enclosures for specific applications.

Circle No. 316 on Inquiry Card—Page 17

It's New! Tested! Proven!

HY-PRO TAPS now come in **TRANSPARENT PACKAGES!**

**... For Immediate
Visible Identification!**



THE TAP SPECIALISTS DO IT AGAIN!

True to their reputation as *The Tap Specialists*, Hy-Pro has pioneered in the development of these revolutionary transparent tap packages.

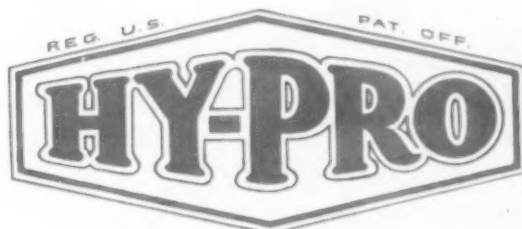
They have been designed to save you money in inventory counts, size and thread checks, storage space, shipping and handling . . . at no extra cost to you. And you'll find a handy pocket reference chart under each tray.

Call for yours today. Hy-Pro offers a full line of top quality taps produced by engineer specialists.

Here's what Hy-Pro's exclusive reinforced plastic packages mean to you:

- Immediate visible identification
- Faster Inventory
- Quicker Running Counts of Taps Used
- Instant Size & Thread Checks
- Less Storage Space Needed
- Greater Strength, No Warping
- 80% Lighter Weight for Shipping

... At no extra cost to you!



HY-PRO TOOL CO., NEW BEDFORD, MASS., U. S. A.

For More Information Circle No. 635 on Inquiry Card—Page 17

MAY, 1954

389

THE CORD SET

... Protecting Your Product's Reputation!



Consumer goodwill, which determines the reputation of your product, depends on "The Vital Link between Power and Performance". . . the cord assembly you use!

That's why a cord set from Riverside is the best investment you can make. You save assembly time with easily installed pre-fabricated wiring. You avoid the upkeep of specialized production equipment.

But most important . . . you install "Reputation Insurance" on every assembly where you use a Riverside cord set! Take advantage of our specialized engineering experience and production facilities. Send samples or prints for prompt recommendations and a firm quotation without obligation.

Riverside
Manufacturing

AND ELECTRICAL SUPPLY COMPANY
10219 Michigan Ave. • Dearborn, Mich. • Phone Tiffany 6-6800

WIRING HARNESSES AND ASSEMBLIES • CORD SETS
HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES
RELAYS • MOLDED RUBBER PRODUCTS

For More Information Circle No. 636
on Inquiry Card—Page 17

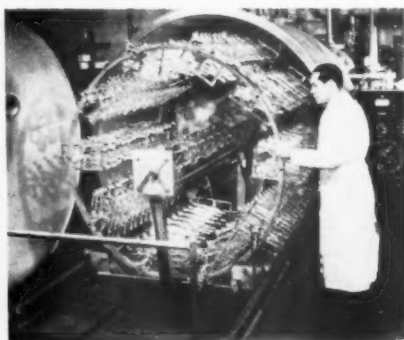
390

Colloidal Dispersions Speed Ejection of Mold Castings

By using dispersions of colloidal or semi-colloidal graphite for mold coatings in the casting of aluminum and magnesium, the Alumicast Corp., Chicago, has increased production in two ways. Ejection of castings from molds is speeded up and rejects from drag in the mold are reduced. In addition to the fact that the dispersions do not combine chemically with molten aluminum, they also inhibit certain types of corrosion.

Circle No. 317 on Inquiry Card—Page 17

Vacuum Metallizing, Scrap Plastic Cut Costs 66%



Inexpensive aluminum deposited under vacuum on scrap polystyrene, gives Ideal Toy Corp. toys an appealing, metallic look with low production costs. Using the scrap plastic culled from other molding operations, the firm reworks it into inexpensive toys that look expensive. Using an automatic vacuum metallizing unit, the firm turns out 200 toys every fifteen minutes, around the clock, seven days a week. The metallizing requires no buffing or polishing operation—just a coat of protective lacquer.

Circle No. 318 on Inquiry Card—Page 17

Paperboard Production Upped 10% With Drying Tubes

An installation of warm air drying tubes on a 50-year old paper machine increased paperboard production by 10% for Durham Paper Board Co., Riegelsville, Pa. Warm air at 175F, supplied under pressure by an oil fired, warm air, space heater, absorbs additional moisture from the paper. The positive pressure established around the steam drying drums also helps the exhaust fans to carry off the moist air more efficiently.

Circle No. 319 on Inquiry Card—Page 17

Removal of Scale Took 2 Hours; Now Done in 7 Minutes



Wet blasting removes heat treat scale at sharply reduced cost for Chicago Mold Engineering Co., Hillside, Ill. A set of 17 mold cores 4" x 4½" x 1¾" in size are descaled with 7 minutes wet blasting per piece. Formerly, manual polishing required two hours per piece. After wet blasting, only deep blemishes must be cleaned up manually if special finishes are not required.

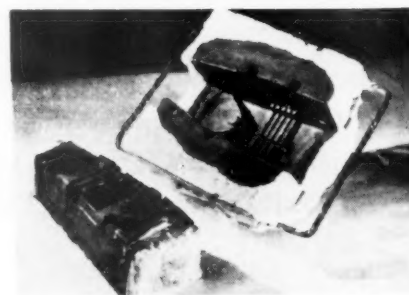
Circle No. 320 on Inquiry Card—Page 17

Cold Metal Cleaner Saves \$333 Monthly

A Detroit plant saves \$332.95 monthly with a metal parts cleaner which is used at room temperature. Most of the saving comes from elimination of heating costs, although the longer life of the cold cleaner solution increases its economy. Intangible savings such as better rust proofing of parts and lower tank maintenance expense are also reported.

Circle No. 321 on Inquiry Card—Page 17

Flexible Molds Reduce Parts Costs Up to 90%



Use of flexible molds cuts costs of making small lots of appliance parts as much as 90% at General Electric. New iron handles, clock cases, etc. are made in lots of 12-20 to test consumer acceptance. They

(Please turn to page 396)

For More Information Circle No. 637
on Inquiry Card—Page 17→

PURCHASING



Arthur R. Wiley, National Warehouse Manager of A. G. Spalding & Bros., Inc., tells why:

He's famous for his fast delivery!

"Imagine the stands filled," says Spalding's Arthur Wiley, "the major league teams in their dug-outs, the mounting expectation — and no baseballs!

"It sounded like an 'emergency.' The balls used in all major league games are specially tested for perfection. The club was half-way across the country from our Chicopee, Mass. plant and a double-header scheduled.

"But we're used to delivering fast. We solve situations like this week-in and week-out by relying on Air Express.

"So, we just called Air Express on this job. The balls were flown west, were delivered and actually in play on the field a few hours later.

"We use Air Express throughout the year to ship all kinds of sports equipment throughout the country.

"Practically all these shipments cost less with Air Express than with any other air service."

It pays to express yourself clearly. Say Air Express! Division of Railway Express Agency.



Air Express



GETS THERE FIRST via U.S. Scheduled Airlines

CALL AIR EXPRESS ... division of RAILWAY EXPRESS AGENCY

For More Information Circle No. 640 on Inquiry Card—Page 17



AMERICAN Tubular and Split RIVETS

In all metals, all styles,
for all industrial applications.

Write for price list.

AMERICAN RIVET COMPANY
849 N. Kedzie Ave., Chicago 51, Ill.

BUY AMERICAN...Tubular and Split Rivets...

For More Information Circle No. 641 on Inquiry Card—Page 17

Kill the ROOTS

and you kill the WEEDS!

NEW DOLGE N P WEED-KILLER

—Can be used with confidence by anyone. Kills all vegetation by contact and translocation to weed roots; sterilizes the soil. RESULTS APPARENT IN A FEW DAYS. Spray, sprinkle or use as dry powder—"built-in" wetting and spreading agent works fast by wetting waxy surfaces of plants and inducing penetration into leaves, stems, roots. Non-inflammable, non-volatile, non-corrosive.

DOLGE SS WEED-KILLER

—Where NO vegetation is desired . . . on walks, drives, areas close to buildings. Tends to sterilize the soil so that wind-blown seeds cannot germinate.

DOLGE E.W.T. 40- 2, 4-D SELECTIVE WEED-KILLER

—Will not harm good lawn grasses, but kills dandelions, plantain and other broad-leaved noxious plants in turf.

Write for Dolge booklet on chemical weed control,
and see your DOLGE SERVICE MAN for practical
weed control advice.

Ask about **SOLEXTO**
Kills grubs of turf insects
—one application protects
lawns for years!

Dependable
DOLGE

WESTPORT, CONNECTICUT

For More Information Circle No. 642 on Inquiry Card—Page 17

(Continued from page 390)

are molded from vinyl resin using flexible molds made of low-temperature curing plastisols. Previously, temporary metal molds were used. Cost of a dozen samples of a certain part was reduced from \$3000 to \$300.

Circle No. 322 on Inquiry Card—Page 17

Electric Hoist Drops Handling Costs 40%



By hanging hides on sticks and putting stick loads on an overhead rack, Graton and Knight Co., Worcester, Mass., has reduced handling costs by 40%. A special hide carrier, driven by an electric hoist and trolley, picks up all stick loads and transports them on a monorail to the appropriate tanning pit. Under the old method, men nailed each hide to a stick and lowered them into the pit individually. Pit load has been increased from 70 to 100 hides.

Circle No. 323 on Inquiry Card—Page 17

Reinforced Tape Speeds Shipping Operations



In the shipping department of a power tool manufacturer, reinforced tape has freed half the staff for work elsewhere. Heavy cartons, formerly bound and secured for shipment with steel strapping by two men, are now taped by one man. In addition, the tape has been found to be durable enough to assure complete sealing en route.

Circle No. 324 on Inquiry Card—Page 17

GAIR can help

MERCHANDISE YOUR PRODUCT



With Gair display stands working for you in retail outlets, it's like having a company salesman in every store. The mass presentation of your product commands the attention of passing shoppers . . . the constant repetition of your sales message stimulates the urge to buy.

Do you want to introduce a new product? Pep up the sales of a standard item? Push a combination deal? Gair display stands will help.

Designed for long and useful promotional life,

these stands are sturdily constructed of corrugated board and are attractively printed. For greatest visual impact, you can have your sales story printed in more than one color on a contrasting background color of your choice.

Check with the Gair plant nearest you to learn which of the many styles will make a perfect setting for your product. Learn, too, how Gair's assured supply source, design ability and delivery service help give you the best in corrugated display aids.

CAMBRIDGE, MASS. • CLEVELAND, OHIO • HOLYOKE, MASS. • MARTINSVILLE, VA. • NO. TONAWANDA, N. Y.
PHILADELPHIA, PA. • PORTLAND, CONN. • RICHMOND, VA. • SYRACUSE, N. Y. • TETERBORO, N. J.



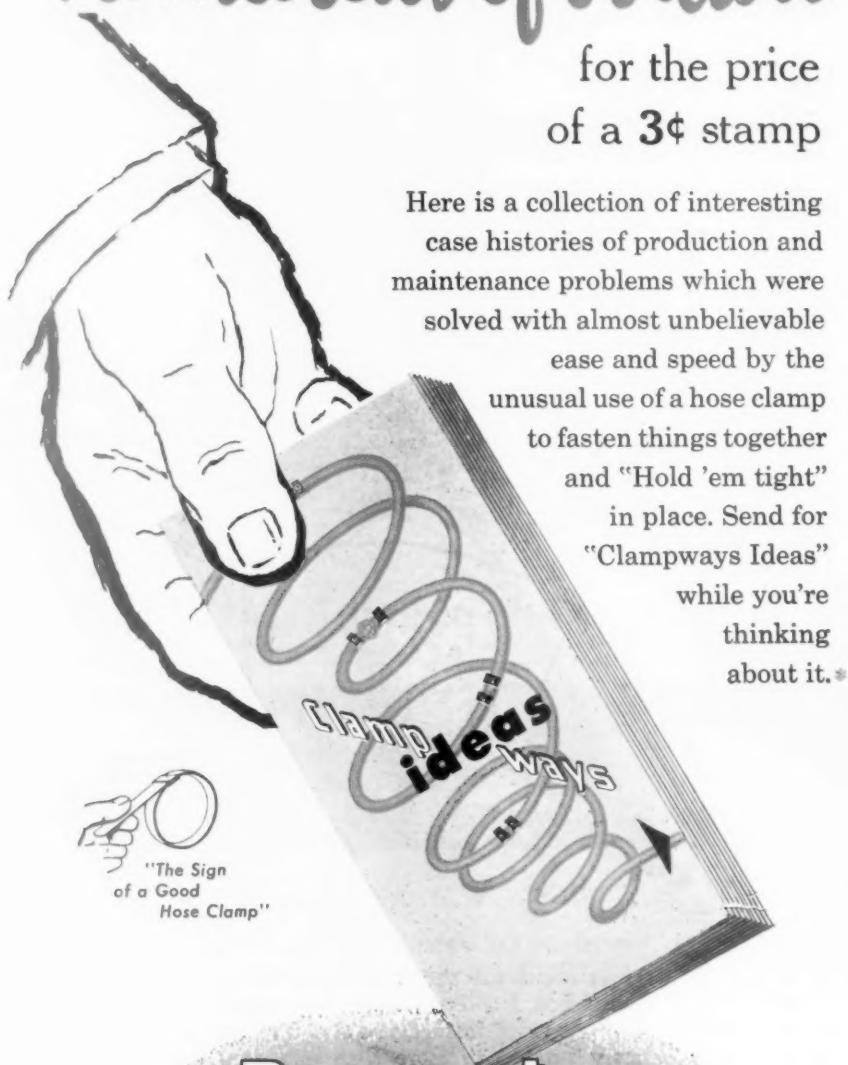
GAIR

SHIPPING CONTAINERS
FOLDING CARTONS
PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44th STREET • NEW YORK 17

For More Information Circle No. 643 on Inquiry Card—Page 17

ideas...worth hundreds of dollars for the price of a 3¢ stamp



Here is a collection of interesting case histories of production and maintenance problems which were solved with almost unbelievable ease and speed by the unusual use of a hose clamp to fasten things together and "Hold 'em tight" in place. Send for "Clampways Ideas" while you're thinking about it.*

PUNCH-LOK
Company

*...or get your copy from your near-by Punch-Lok Distributor.

do it now

send me Clampways ideas FREE

Punch-Lok Company
Dept. E, 321 North Justine Street
Chicago 7, Illinois

Firm Name _____

My Name _____ Title _____

Address _____

City _____ State _____

4800

398

For More Information Circle No. 644 on Inquiry Card—Page 17

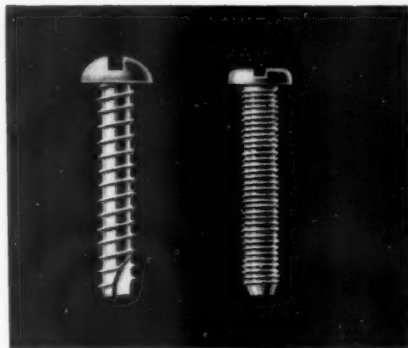
Wire-Bound Boxes Save 60% in Packing, Shipping Costs



Ditto, Inc., Chicago, has saved up to 60% in packing and shipping costs since converting to wire-bound containers for their duplicators and supplies. The conversion brought about a reduction of more than 70% in shipping container tare weight and 52% over-all packing costs for just one 50-lb. model. Typical savings have been realized for all other Ditto models as well as the many cartons of supplies.

Circle No. 325 on Inquiry Card—Page 17

Cold Formed Screw Cuts Cost 25%, Ups Production 250%



The self-tapping screw at left, used in a fixture made by a fluorescent lighting manufacturer, cost \$12 per thousand. It was replaced by a cold formed screw which cost only \$9 per thousand. In addition to reducing the cost of the screw, production has been considerably increased. The new screw is set, automatically, in less than 1/3rd the time. As a result, seven assemblies are now completed in the time that used to be required for two.

Circle No. 326 on Inquiry Card—Page 17

**USE INQUIRY CARD
PAGE 17 FOR MORE
INFORMATION ON PRODUCTS
IN THIS ISSUE**

PURCHASING

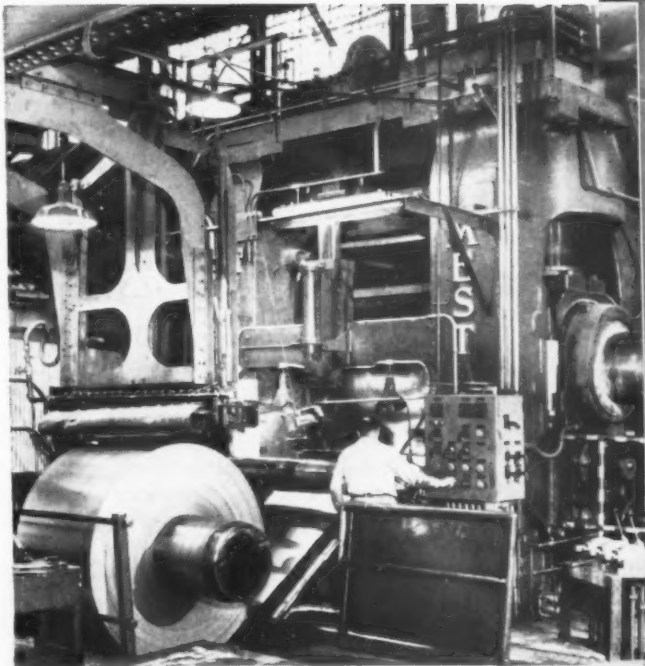
160 PRODUCTION HOURS PER WEEK

MAKE

OKOLITE- OKOPRENE

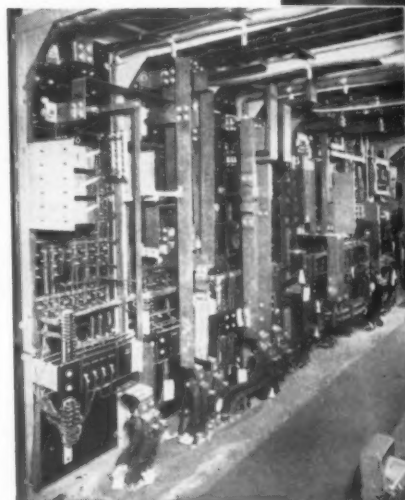
A MUST

FOR THIS MILL



Round-the-clock operation of this temper mill is typical of the severe conditions that have proved Okolite-Okoprene's dependability in industrial service.

This interior view of the motor room shows the control panels for the temper mill, wired for dependability with Okolite-Okoprene.



OKONITE



insulated cables

Operating schedules on the 77-inch Temper Mill at Jones & Laughlin's Cleveland plant call for 20 turns a week of eight hours each—160 hours per week—and the schedule is kept. As in so many other steel plant installations where loss of production due to equipment failure is a serious factor, Jones & Laughlin here relies on Okolite-Okoprene to eliminate electrical outages.

Millions of feet of Okolite-Okoprene installed in every service under every operating condition prove the toughness and dependability of Okolite-Okoprene wires and cables. Steel mill applications, where heat, moisture, oil and abrasion destroy ordinary cables, are the best testimonial to the high quality of Okolite-Okoprene. The Okoprene sheath—Okonite's neoprene compound—will not rot or deteriorate under the most difficult operating conditions. Okolite insulation, proved in use for 30 years, provides excellent ozone, moisture and heat resistance, high dielectric strength and long life.

Bulletin PG-1053 contains full information on the applications and advantages of Okolite-Okoprene. Write for it today to The Okonite Company, Passaic, N. J.

For More Information Circle No. 645 on Inquiry Card—Page 17

MAY, 1954

1909

399

**YOU CAN mold it •
shape it • turn
it • cast it • paint
it • carve it • weld
it • package it •
shrink it • heat
it • compress it •
machine it • plate
it • prime it •
thread it • wire
it • round it •
flatten it •**

BUT

**IF YOU DON'T
GET IT ON TIME...
YOU CAN'T USE IT
FOR ANYTHING!**

That's why more and more purchasing agents are specifying National Carloading on their purchase orders. They know that it means their shipments will travel "The Best Way."

A COMPLETE TRANSPORTATION SERVICE FOR



- Domestic L.C.I.
- Import-Export

• Used Household Goods, Autos

NATIONAL CARLOADING CORPORATION

Judson Sheldon Division • Judson Freight Forwarding Division
19 RECTOR STREET, NEW YORK 6, N. Y.

For More Information Circle No. 646
on Inquiry Card—Page 17

400

Plastic Trailer Resists Corrosion, Nonelectrolytic

A New England carrier has reduced costs with a corrosion plastic trailer. The plastic trailer is washed out as easily as a pane of glass. In addition, hides, lye, storage batteries—either acid or alkali cargo—can be transported in the plastic freighter without special precautions. After a year's use no corrosion is apparent. Formerly 3 months was the limit before the metal was eaten away.

Circle No. 327 on Inquiry Card—Page 17

Abrasive Belt Ups Production from 30 to 50 Units Per Hour



In the removal of risers from brass and aluminum castings, production was increased from 30 to 50 units per hour at the J. Rohm and Sons Foundry Co., Kenilworth, N. J. It was done by switching to a cloth abrasive belt and a serrated rubber contact wheel. The change also provides greater safety and less fatigue for the operator in addition to the lowering of operating costs.

Circle No. 328 on Inquiry Card—Page 17

Air-Operated Tool Does Nut Running Job in 1/12 Time

Faced with the purchase of a special tool to handle a heavy nut running job, a pump manufacturer found a large standard air-operated tool could do the job in 1/12 the time previously required. On this basis, the tool, costing \$700 complete with sets of sockets, paid for itself in less than 22 hours of actual use.

Circle No. 329 on Inquiry Card—Page 17

Export Packing Costs Down 70%

By adopting prefabricated boxes in just three different sizes for export packing of its more than 4,000 different types, sizes and kinds of seamless fittings for piping, Tube turns, Inc., Louisville, Ky., cut



over-all packing-for-export costs by 70%. At the same time, it reduced shipping container weights by two-thirds and cut displacement by 25%. It also eliminated shipping damage due to container failure.

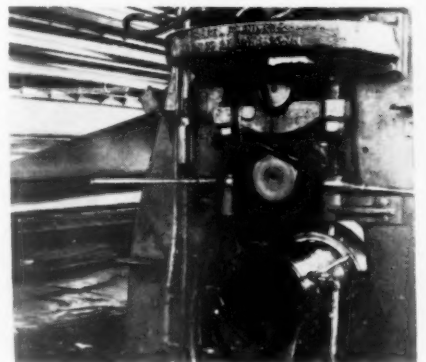
Circle No. 330 on Inquiry Card—Page 17

Metallizing Rebuilds Rams; Yearly Saving—\$3000

A manufacturer of aluminum extrusion formerly repacked pull-back rams on his aluminum extrusion press bi-weekly because of bad scoring. After rebuilding rams with metallized stainless steel, repacking has not been necessary for four years. Savings approach \$3000 annually.

Circle No. 331 on Inquiry Card—Page 17

Water Lubricated Bearing Shows 1/32" Wear in Five Years



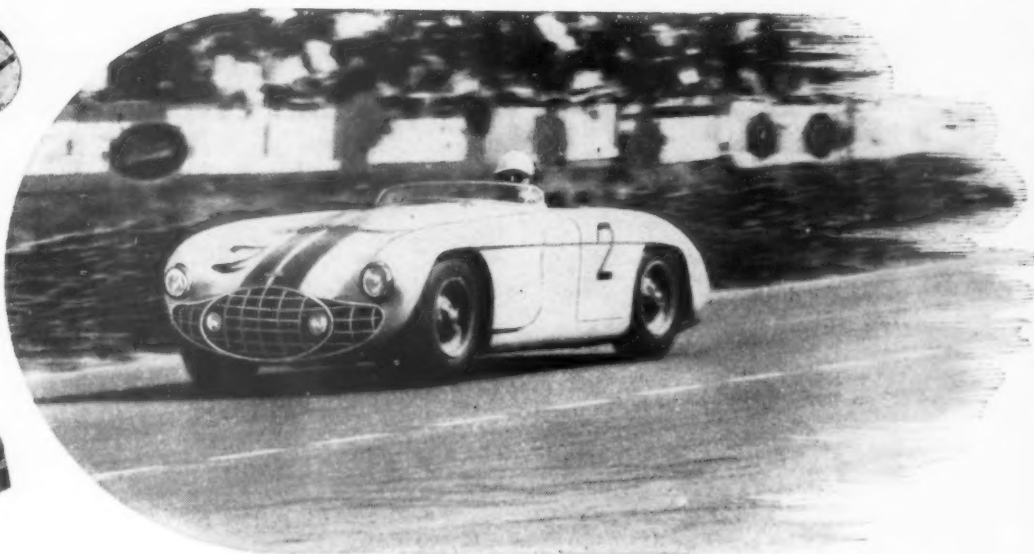
In a five year period of incessant service, a bearing used by a manufacturer showed only .03125" wear—far better than the performance of the babbitt metal it replaced. Operating reports showed trouble-free service and cool running journals with no wastage from oil or grease contamination. The laminated plastic material is water lubricated, paying for itself in a short time, and reduces power consumption.

Circle No. 332 on Inquiry Card—Page 17

PURCHASING

Safe Driving at **154** m.p.h...

thanks to **FRASSE** alloy steels



Courtesy: B. S. Cunningham Co.

Clocked at 154 mph, this American Cunningham won top honors in its class at Le Mans, France. Expert driving—plus expert design—brought home the bacon.

The near-endless abuse of a grueling 24 hour grind demanded foresight in materials selection. Parts failure could have been costly . . . perhaps fatal.

To meet rigid design specifications, the maker consulted Frasse Technical Service. Frasse engineers prescribed a heat treated, 40 carbon

alloy—shipped direct from warehouse stock. Axles, spindles, brake parts, steering arms—all vital parts—were machined from Frasse steels. The result attests to their perfect performance.

When you're faced with an alloy problem—let Frasse know-how prescribe for you. Frasse alloy steels include all the popular grades—in a wide range of sizes—and Frasse Technical Service stands ready to assist you in their application. Why not let this combination help make your product a winner?

MACHINING ALLOY AND CARBON STEELS?

Get this handy Frasse data chart Sec. F, No. 6. It includes surface cutting speeds for alloy and carbon steels. You'll find it ideal for shop or estimating use. Mail the coupon for your free copy—today.



Call **FRASSE 1st** for **ALLOY STEELS**

Peter A. Frasse and Co., Inc., 17 Grand Street, New York 13, N. Y.

11-AA

Please send me your free data chart Sec. F, No. 6.

Name _____ Title _____

Firm _____

Address _____

Peter A. FRASSE and Co., Inc.

New York 13, N. Y.
17 Grand Street, Walker 5-2200

Philadelphia 29, Pa.
3911 Wissahickon Ave., Baldwin 9-9900

Buffalo 7, N. Y.
P.O. Box K, Station B, Washington 2000

Syracuse 1, N. Y.
P.O. Box 1267, Syracuse 73-5241

Hartford 1, Conn.
P.O. Box 1949, Chapel 6-8835

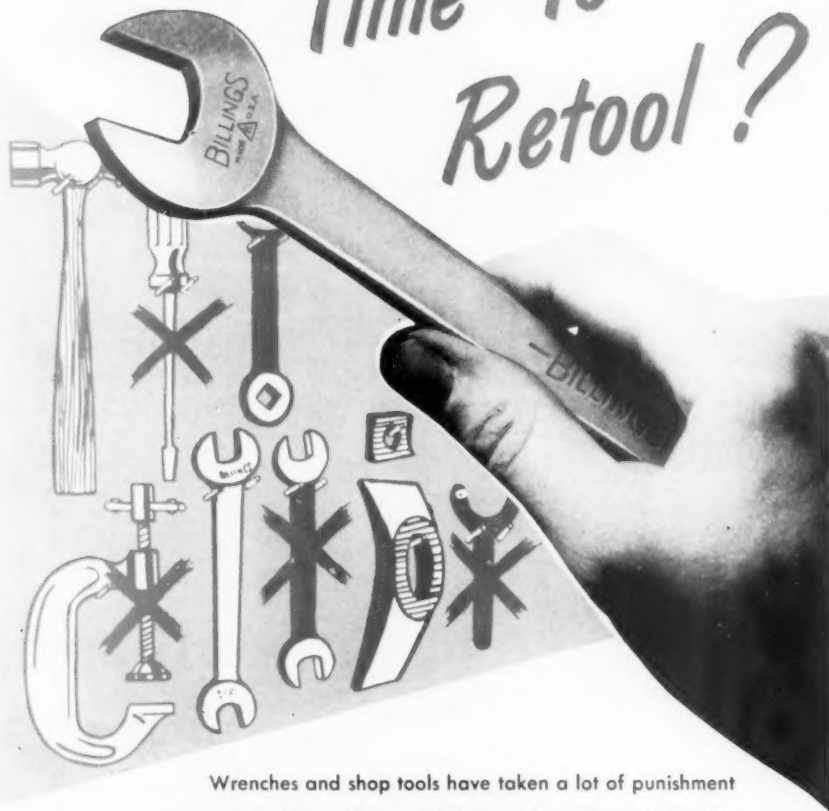
LYNDHURST

• ROCHESTER

• BALTIMORE

For More Information Circle No. 650 on Inquiry Card—Page 17

Time To Retool?



Wrenches and shop tools have taken a lot of punishment on production lines and in machine shops during the past months. Many are worn-out, broken and ready for replacement. Now is the time to look 'em over and re-tool for maximum efficiency and economy.



Call Your Billings Distributor

In any re-tooling program it's smart to consult your Billings Distributor. He is thoroughly familiar with the Billings line of top quality wrenches and shop tools and will make recommendations to fit your specific needs. Better still, he maintains a complete stock of Billings Vitalloy® forged and carbon steel drop forged wrenches and shop tools which he will deliver to your plant on a moment's notice.



Call him now! Let him show you Billings wrenches and shop tools and you too will agree when he says; — "BILLINGS is the Better Buy!"



quality tools & forgings since 1869

THE BILLINGS & SPENCER CO.
HARTFORD 1, CONN., U.S.A.

For More Information Circle No. 651 on Inquiry Card—Page 17

New Method Reduces Fence Painting Time



When wire fences were not allowed to rust away, they were coated with brush or spray. Most of the coating material wound up on the ground rather than on the fence. A lambs wool roller soaked in rust preventive now permits this job to be done in half the time and 99% of the coating is used on the fence. Coverage is much better and unsightly drippings are drastically reduced.

Circle No. 333 on Inquiry Card—Page 17

Flexible Shaft, Conveyor Cut Unloading Time 50%



Unloading feed from trucks required 4 men and a full day to handle 30 tons by hand. Using a conveyor and a flexible drive between it and the power shaft of the truck, one man can unload 35 tons in half a day. Only one truck instead of two is now needed to meet the daily requirements.

Circle No. 334 on Inquiry Card—Page 17

Copper Clad Metal Aids Safety

Greatly increased efficiency and safety result from using copper clad metal in the electrification of Monorail systems made by Insul-8-Corporation. Combining the strength of steel with the conductivity of copper, it gives long life and simplifies installation.

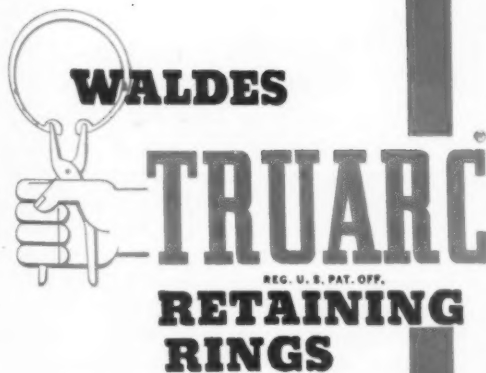
Circle No. 335 on Inquiry Card—Page 17

Wherever you're located

YOU CAN GET WALDES TRUARC RINGS IN A MATTER OF HOURS

...and whatever you make, there's a Waldes Truarc Ring designed to save you material, machining and labor costs:

basic types				for taking up end-play			
BASIC		INVERTED		BOWED		BEVELED	
#5000 (internal)	#5100 (external)	#5008 (internal)	#5108 (external)	#5001 (internal)	#5101 (external)	#5002 (internal)	#5102 (external)
Tapered design principle permits rings to maintain constant circularity and pressure against bottom of groove.		Inverted construction provides uniform protruding shoulders while maintaining constant circularity when installed in groove.		Bowed construction permits resilient take-up of end-play.		Beveled construction permits rigid take-up of end-play.	
for radial assembly				self-locking types			
E-RING	CRESCENT	INTERLOCKING	CIRCULAR SELF-LOCKING		TRIANGULAR SELF-LOCKING	TRIANGULAR NUT	GRIP-RING
#5133 #5131 (bowed)	#5103 (external)	#5107 (external)	#5005 (internal)	#5105 (external)	#5305 (external)	#5300 (external)	#5555 (external)
Radially applied. Provides large shoulder on small shaft diameter. Bowed version provides take-up of end-play.	Applied radially over shaft. Secure against impact and vibration.	Two-piece ring applied radially. Secure against extremely high r.p.m.'s and heavy thrusts.	Installed axially. Requires no groove. Recommended for permanent assemblies exposed to relatively moderate thrusts, impacts or vibrational loading.		Low cost retainer. Makes possible tight assemblies free of end-play on relatively soft shafts.	Flattens under torque. Secures equal load distribution. Replaces lock washer on screw.	Applied axially on shaft. Requires no groove. Exerts considerable frictional hold against axial displacement.



Waldes Kohinoor, Inc.,
47-16 Austel Place, L.I.C. 1, N. Y.

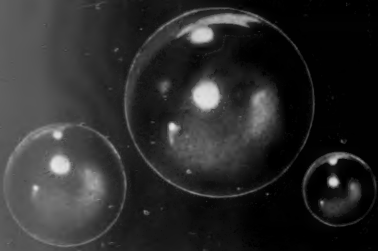
WALDES TRUARC RETAINING RINGS AND PLIERS ARE PROTECTED BY ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2,382,947; 2,382,948; 2,416,652; 2,420,921; 2,428,341; 2,439,798; 2,441,846; 2,458,169; 2,483,380; 2,483,393; 2,487,602; 2,487,603; 2,491,306; 2,509,081 AND OTHER PATENTS PENDING

ONE OF THESE AUTHORIZED DISTRIBUTORS IS CONVENIENT TO YOU:

ALA. Birmingham, Moffatt Brgs.
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ARK. Little Rock, Southern Brg. Service, Inc.
CAL. Los Angeles, Edw. D. Maltby Co., Inc.
Maywood, Edw. D. Maltby Co., Inc.
OAKLAND, Bearing Specialty Co.
SACRAMENTO, Bearing Spec. Co.
SAN DIEGO, E. D. Maltby Co., Inc.
SAN FRANCISCO, Bearing Spec. Co.
CANADA
Lyman Tube & Brgs., Ltd.
Offices in: Montreal, Quebec;
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Toronto, Ontario; Vancouver,
British Columbia; Winnipeg,
Manitoba.
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CONN. Bridgeport, Bobker Brgs.
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Decatur, Illinois Brg. Co.
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IND. Evansville, Bearings Svc. Co.
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Indianapolis, Service Supply Co.
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Des Moines, Standard Brgs. Co.
SIoux City, Standard Brgs. Co.
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MO. St. Louis, Neiman Brgs. Co.
N.J. Clifton, Bobker Brgs., Inc.
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N.C. Charlotte, Moffatt Brgs. Co.
Greensboro, Tennessee Brgs., Inc.
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Lima, Ohio Ball Bearing Co.
Mansfield, Ohio Ball Bearing Co.
Toledo, Ohio Ball Bearing Co.
Youngstown, Ohio Ball Brg. Co.
Zanesville, Ohio Ball Brg. Co.
ORE. Eugene & Portland, The General Tool Co.
PA. Erie, Pennsylvania Brgs.
Johnstown, Pennsylvania Brgs.
Philadelphia, Moffatt Brgs. Co.
Pittsburgh, Pennsylvania Brgs.
York, Pennsylvania Bearings, Inc.
TENN. Kingsport, Tennessee Brgs., Inc.
Knoxville, Tennessee Brgs., Inc.
Memphis, Southern Bearing Svc., Inc.
UTAH Salt Lake City, Bearings Service & Supply Co.
VA. Richmond, Moffatt Brgs. Co.
WASH. Seattle, Bearing Engineering & Supply Co.
Yakima, Yakima Bearing Co.
W. VA. Charleston, West Va. Bearings, Inc.
Huntington, West Va. Brgs., Inc.
WIS. Appleton & Milwaukee Wisconsin Bearing Co.

Factory engineering representatives available in each area.

For More Information Circle No. 654 on Inquiry Card—Page 17




Balls of steel,
brass, bronze,
monel-metal,
stainless steel

BALLS
HOOVER
BALL BEARINGS

America's only ball bearings
with Honed Raceways

*The
Aristocrat
of Bearings*




HOOVER BALL and BEARING COMPANY • Ann Arbor, Michigan

For More Information Circle No. 655 on Inquiry Card—Page 17



Everybody knows this sign
stands for dangerous curves

...and smart gear buyers

know this sign  stands for

the best in custom gears.

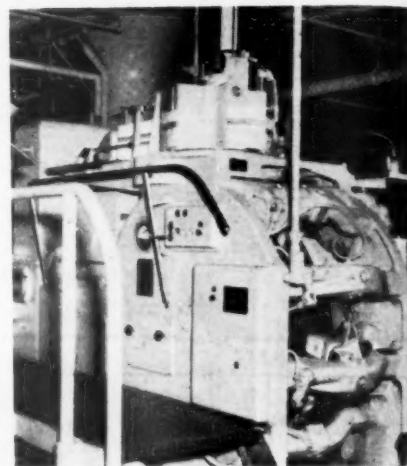


"Gears... Good Gears Only"

THE CINCINNATI GEAR CO. • CINCINNATI 27, OHIO

For More Information Circle No. 656 on Inquiry Card—Page 17

Brush-applied Ester Paint Sets In 4 Hours



H. P. Hood and Sons, New England dairy company, has reduced painting costs by applying a resin based coating to walls, ceilings, equipment and piping throughout its plant and offices. It requires no neutralizer or sealer when used on raw plaster or cement and sets in four hours. Frequent repainting is eliminated due to its resistance to alkali and high humidity.

Circle No. 336 on Inquiry Card—Page 17

Brochure on Curbing

Municipal and industrial buyers with responsibility for buying curbing will be interested in a new brochure issued by H. E. Fletcher Co., West Chelmsford, Mass. It is entitled "Standardized Granite Curb for Highway Safety & Traffic Control." An illustrated, 20-page book, it contains necessary information for specification and selection.

1 1 1

ASA Starts Project on Standards for Pallets

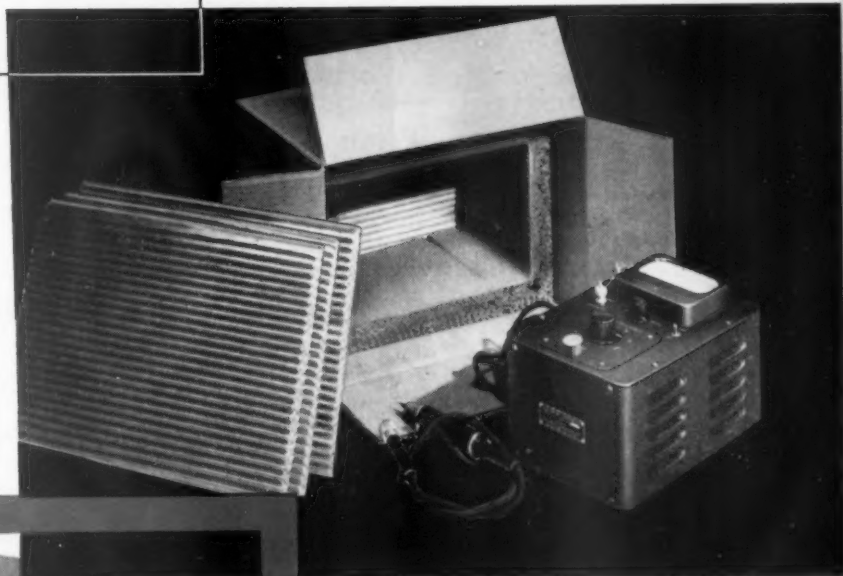
Asserting that standards for handling material are necessary to U.S. economy and defense, representatives of the armed forces, government departments and industry have voted to organize a committee to study and develop American Standards for pallets. The meeting was held at the offices of the American Standards Association.

Forty leaders of industry and government proposed that an ASA project be initiated to undertake the standardization of nomenclature, sizes, materials and components of pallets, including samplings, inspection and test procedures.



CUT
sales
resistance

SLICE
product
damage



SLASH
packing
time

Write for free booklet,
"How To Ship More Economically
in Corrugated Boxes."
Hinde & Dauch, Sandusky 26, Ohio

HINDE & DAUCH
Authority on Packaging

40 SALES OFFICES • 17 MILLS AND FACTORIES



Cora Gated



HERE'S PROOF
High Precision
doesn't mean
High Prices!

SEND TODAY FOR OUR NEW
 CATALOG AND LATEST PRICE SHEET

"Fischer Turned"

BRASS NUTS

COST LESS TO BUY! COST LESS TO USE!
Than Nuts Produced By Other Methods.

The Catalog and Price List offered will prove our High-Precision, Low-Price Promise. The new 16 page Catalog gives you the details and features that make "Fischer Turned" Brass Nuts more economical to use.

Our Latest Price Schedule will show you that these Fischer features don't cost you an extra cent. In fact, "Fischer Turned" Brass Nuts will probably cost less than the nuts you are using now.

POSITIVE "ON TIME" DELIVERY

You don't guess! You don't worry when you order "Fischer Turned" Brass Nuts. Your order arrives on or before the promised delivery date. So Specify and Order "Fischer Turned" Brass Nuts ... get *Precision, Price and Positive Delivery!*

Remember!

FOR PRECISION MADE SPECIALS
Check Fischer!

Fischer SPECIAL MFG. CO.
 446 Morgan St., Cincinnati 6, Ohio

For More Information Circle No. 660 on Inquiry Card—Page 17



**Purchasing—Business Experts
 Needed by U. S. Civil Service**

Examinations have been announced by the U. S. Civil Service Commission for contract specialists in various Federal agencies in Washington, D.C., and vicinity. Most of the posts are in the Navy Department and call for contract specialists who are business and purchasing experts to negotiate with representatives of industrial, construction, and research organizations as well as educational and other non-profit institutions.

The main objective is to assure economical and effective means of procurement and determining prices and other terms of contracts for ships, aircraft, ordnance, instruments, construction, etc.

Most of the positions involve high-level, person-to-person bargaining with representatives of business and industry covering the following specializations:

1. Original negotiations.
2. Negotiations incident to administration contracts.
3. Negotiations incident to the termination of contracts.

All applicants must be citizens of the United States. However, there are no age limitations. Varying degrees of business experience is required and information to that extent can be obtained from most Post Offices or from the U. S. Civil Service Commission, Washington 25, D.C.

1 1 1

**D. C. Purchasing Issues Paper
 on 1953 Review—1954 Trends**

A comprehensive analysis of business conditions in general has been issued by Roland M. Brennan, procurement officer, Washington, D. C., under the title, "Year-End Economic Review, Price Comparisons, Price Trends and Digest of Forecasts for 1954". Divided into three parts, Mr. Brennan's report to the Commissioners, D.C., director of General Administration, the budget officer and his staff and the heads of District Departments and Officers, draws on many sources to show how business has been in 1953 and what can be expected in 1954.

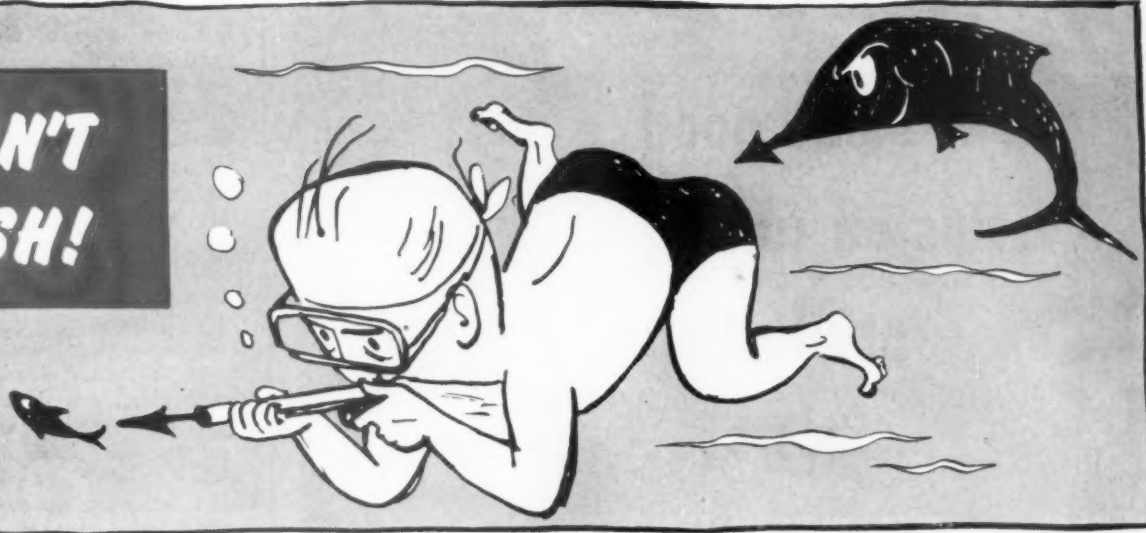
Opinions, statements and researched forecasts issued by N.A.P.A., McGill Commodity Service, Inc., International Statistical Bureau, Inc., PURCHASING, and the Journal of Commerce are used to indicate how a cross-section of the nation's businesses feel about

(Please turn to page 416)

For More Information Circle No. 661
 on Inquiry Card—Page 17→

PURCHASING

**DON'T
FISH!**



Ask Your LYON Dealer!

• No need to fish around for the best in steel equipment. The Lyon Dealer is your man . . . for two big reasons. First, he offers the world's most diversified line of quality steel equipment . . . more than 1500 standard Lyon items. (A very few shown below.) Second, he can show you how to get the most out of steel equipment in terms of time, space and money. Why

not ask him to stop in with his 76-page catalog—chock-full of equipment and ideas.

LYON METAL PRODUCTS, INC.

General Offices: 533 Monroe Ave., Aurora, Ill.

Factories in Aurora, Ill. and York, Pa.

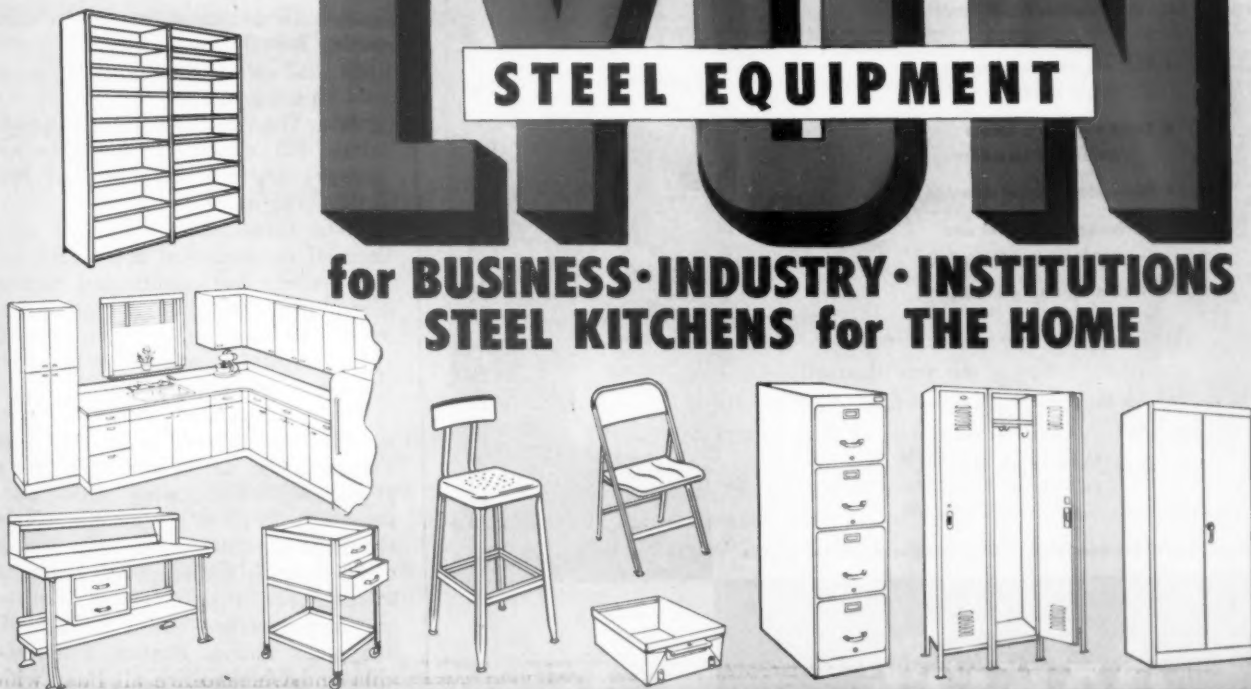
Dealers and Branches in All Principal Cities.

Lyon also has complete facilities for manufacturing special items to your specifications.

LYON[®]

STEEL EQUIPMENT

for BUSINESS·INDUSTRY·INSTITUTIONS
STEEL KITCHENS for THE HOME



A PARTIAL LIST OF LYON STANDARD PRODUCTS

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|-------------|--------------------|---------------|------------------------|---------------------|-------------------|-----------------|---------------|
| • Shelving | • Kitchen Cabinets | • Tool Tots | • Economy Locker Racks | • Display Equipment | • Filing Cabinets | • Service Carts | • Tool Stands |
| • Lockers | • Cabinet Benches | • Bar Racks | • New Freedom Kitchens | • Flat Drawer Files | • Folding Chairs | • Sorting Files | • Shop Boxes |
| • Stools | • Storage Cabinets | • Tool Boxes | • Toolroom Equipment | • Revolving Bins | • Work Benches | • Drawer Units | • Tool Trays |
| • Bin Units | • Drawing Tables | • Parts Cases | • Wood Working Benches | • Hanging Cabinets | • Bench Drawers | • Hopper Bins | • Shop Desks |

For More Information Circle No. 663 on Inquiry Card—Page 17

MAY, 1954

415

For some good tips on cutting production costs...

... take a trip through the pages of this information-packed booklet, "Some Good Things to Know About Metal Cleaning." You'll find job-tested data on many cleaning operations that could well pave the way to lower production costs.

As you flip through the pages, you'll learn how pre-paint treatment with Oakite CrysCoat cuts costs 10 ways ... discover modern methods for treating water in paint spray booths ... read of the advantages of Oakite's rust-prevention methods ... and more.

If you're also purchasing cleaning materials in connection with:

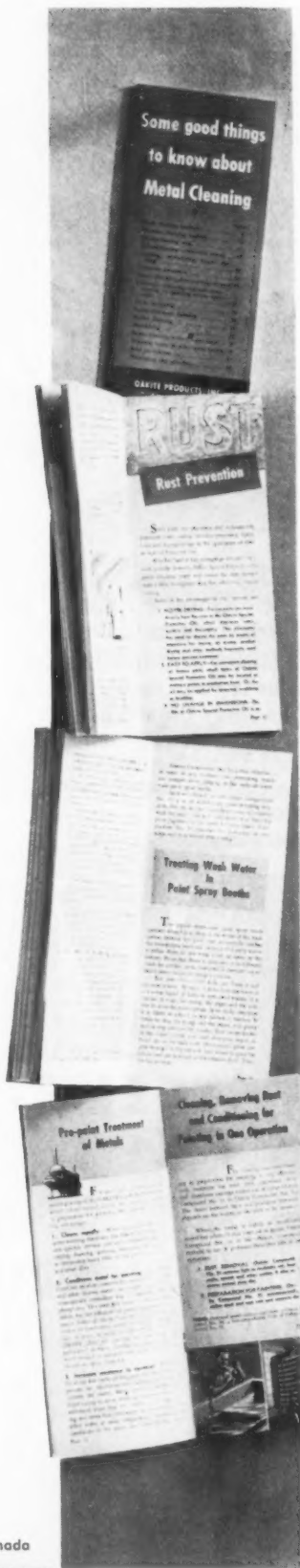
- Pickling, deoxidizing, bright dipping
- Paint stripping, steam detergent cleaning
- Burnishing, barrel cleaning
- Electrocleaning steel and nonferrous metals
- Machining and grinding

you'll want a copy of this well illustrated booklet for your files. It's yours for the asking. Write: Oakite Products, Inc., 54 Rec-tor Street, New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada



For More Information Circle No. 664 on Inquiry Card—Page 17



(Continued from page 412)

business trends. George A. Renard, executive secretary-treasurer, N.A.P.A.; Stuart F. Heinritz, editor, PURCHASING, and Harold C. McClellan, president, NAM, are liberally quoted for indicative reports on general economic and specific item relationships in shaping America's industrial and business trends.

A final section of the report is a statistical comparison of actual commodity price trends over certain periods of time. Some items, such as butter, lead, cotton, steel, sugar, etc., are examined in relation to the effect the Korean War had on them and business. Other material, such as wages, savings, sales, etc., are pointed out in view of their changes over the years from 1950 to the present.

In all cases, Mr. Brennan has noted sources and reference material to back up the pictures painted by the report and has issued the work as a study to guide, not direct, the thinking of the reader.

1 1 1

U. S. Chamber of Commerce Sees Building Boom for '54

Commercial construction this year is due for a boost of at least 10 per cent above last year's peak of \$2.2 billion, the Chamber of Commerce of the United States reports.

All kinds of commercial construction will share in this happy trend, according to the Chamber. Capital outlay for office buildings, loft buildings and warehouses, as a group, can be expected to total 15 per cent greater than in 1953, while expenditures for stores, restaurants and garages are forecast to be at least 5 per cent more.

If to these main classes of commercial construction are added hotels, motels and commercial recreation buildings, the 1954 total will reach \$2.4 billion compared with the 1953 total of around \$2.2 billion, the Chamber pointed out.

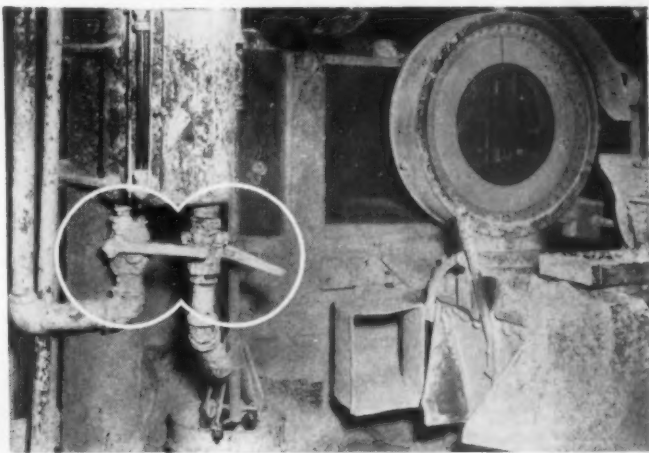
Two spectacular features characterize the current boom: the lush expansion of office buildings and a great wave of shopping center construction. In New York City, nearly six million additional square feet of office space is under construction or in prospect. Pittsburgh, a pioneer in the new office building era, still has plans ahead. Boston, Philadelphia and Chicago are all busy with new structures, while construction is under way or planned in Baltimore, Washington, Atlanta, Dallas, Houston, Denver, Los Angeles and San Francisco.

For More Information Circle No. 665 on Inquiry Card—Page 17→
PURCHASING

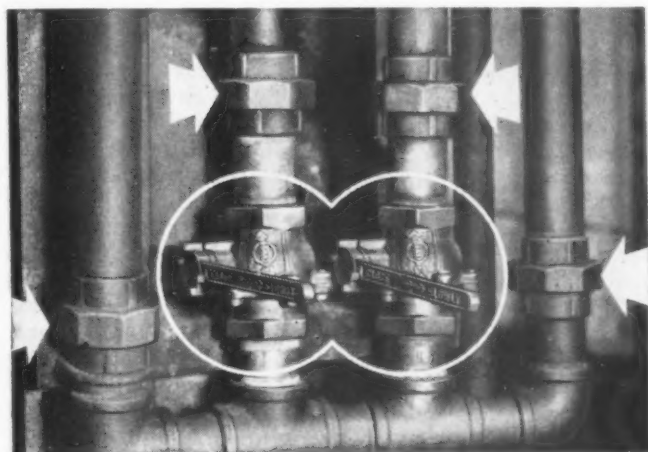
Do you need a MAINTENANCE-FREE VALVE?



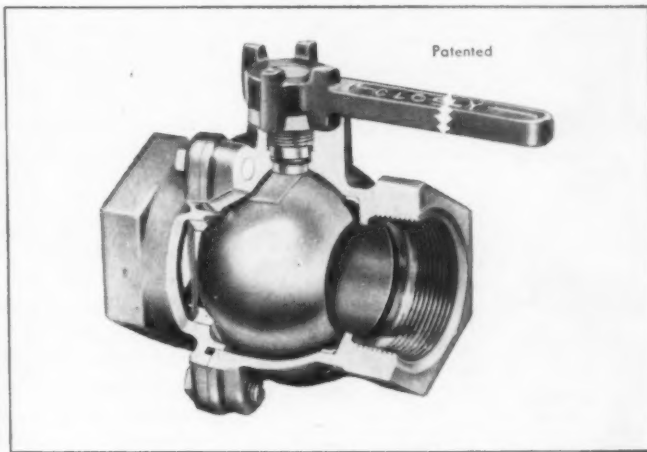
Maintenance-Free in Coolant Service. Previous valves on this grinding machine were repaired or replaced at least once weekly. The present Rockwood Ball Valves, operating 500 times daily, have required no maintenance for over a year.



Maintenance-Free in Glass Making. Replacing valves that lasted only 8 weeks, Rockwood Ball Valves are working 24 hours a day, opening and closing continually. They have not been serviced in over a year.



Maintenance-Free on Quenching Lines. Rockwood Ball Valves in an annealing room handle unfiltered water at 100 psi. Opening and closing 60 times a day, they have outlasted other valves 4 to 1 — without maintenance.



Maintenance-Free for Steady Savings. In Rockwood Ball Valves the chrome-plated ball stands up under constant abrasion, pitting and scratching. They pay for themselves over and over with extra-long, trouble-free service life.

Note these other exclusive features!

Full Round Flow — assuring fast, efficient operation, less friction loss.

Leakproof — in closed position, pressure of fluid automatically positions ball against synthetic rubber seat to form a tight seal.

Quick Opening and Closing — needs only $\frac{1}{4}$ turn even under full pressure.

From alcohol to asphalt, from petroleum to pickling acids, Rockwood Ball Valves perform with trouble-free continuity. Longer time between replacements, less maintenance on the job. Comes in all pipe sizes. Tested and listed by Underwriters' Laboratories, Inc. The coupon will bring you complete information.



ROCKWOOD

THE FLOW IS AS ROUND AS THE PIPE ITSELF

FULL-FLOW BALL VALVES



**ROCKWOOD
SPRINKLER COMPANY**

38 Harlow Street, Worcester 5, Mass.

Send me illustrated folder V-4 on Rockwood Full-Flow Ball Valves.

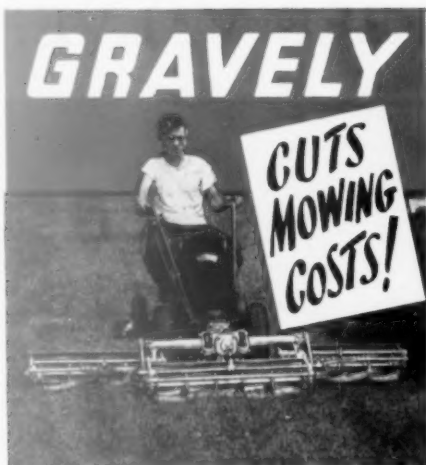
Name

Title

Company

City

Zone State



ONE 5-HP GRAVELY POWERS

3 MOWING TOOLS

YOU CUT MOWING COSTS because ONE Gravely Tractor powers all the tools shown—and more—21 in all!

NO MORE buying an engine for each tool! Instead, ONE 5-HP Gravely with tools changed quickly (only four bolts) handles the job—for the moment, or the season!

SAVE MANPOWER too, since ONE man, with ONE Gravely, can do the upkeep jobs of a crew of eight in the same time! Mechanize the upkeep jobs—get more done better, in less time.

3 SNOW REMOVAL TOOLS

afford YEAR-ROUND USE, in every season—an example of Gravely's versatility.

**MORE
for your
MONEY!**

5-HP—more than twice the power of the usual power mower... all-gear drive, two speeds forward and REVERSE... 21 tools available!

WRITE... GET THE FACTS!

Send for 24-page Booklet, "Power vs Drudgery", that shows you how and why you get more for your money when you get Gravely.

PROOF BY JOB-TEST!

FREE DEMONSTRATION
WE OFFER PROOF by on-the-job demonstration. Just write for literature or FREE Demonstration today!

GRAVELY TRACTORS, INC.
BOX 83 DUNBAR, W. VA.

For More Information Circle No. 668
on Inquiry Card—Page 17



Course for Aircraft Company Buyers Held at Fordham University



AIRCRAFT BUYERS AT FORDHAM—Left to right: Norman Myers, McDonnell Aircraft Corporation; George Butler, Glen Martin Company; William De Bord, Lockheed Aircraft Corporation; and Albert Lewis, Pratt-Whitney Aviation Division.

The usual college freshman is a fellow who adheres pretty closely to his weekly allowance and can't step beyond it without a special paternal dispensation. In many cases, attendance at football games, dances and the like depends entirely on how much part-time work he can squeeze into his crowded schedule.

However, Fordham University in New York has a group of 20 Freshmen who account for annual expenditures of somewhere around 40 million dollars. Strictly speaking, perhaps it's something of an exaggeration to call them freshmen. Most of them are middle-aged business executives—men who buy material for the leading aircraft manufacturers along the Eastern seaboard.

The course at Fordham is sponsored by nine of the leading aircraft manufacturing companies in the eastern United States and Canada. It stems from the recognized increasing complexity of products and items purchased, of government regulation and control requirements, and of the contractual arrangements necessary to expedite and facilitate purchasing and procurement in the industry. In other words, it's designed to make better buyers. The success of the initial venture by aircraft producers on the West Coast at the University of California at Los Angeles prompted the institution of the course at Fordham.

The course at UCLA is headed for its third year and indications are that the one at Fordham is slated for similar success. With 195 persons already pledged for enrollment, the

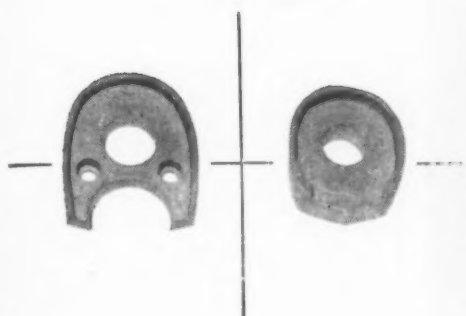
venture is set to continue throughout 1954 with the strong probability that it will carry into 1955.

John P. Quinn, Director of Purchases for the Bendix Aviation Corporation, complimented Fordham University for its "all-out" efforts and stated that it was most ideally suited for such a venture.

"I was very much impressed with the course," said Mr. Quinn, "and consider it the best effort of its kind made to get purchasing agents of a particular industry to devise worthwhile means for the solution of their problems.

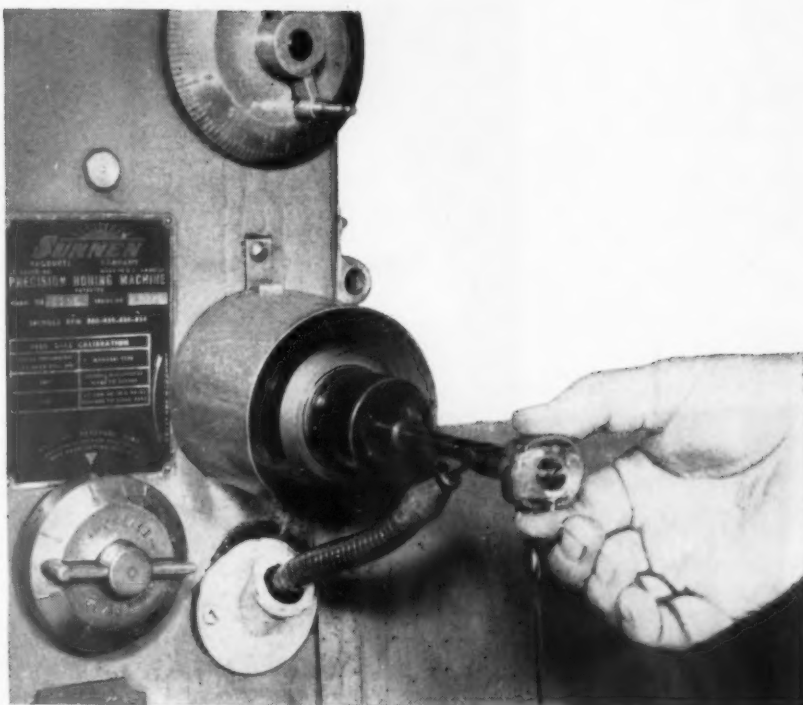
Curtiss-Wright, Grumman, Lockheed and Republic are but a few of the famed aircraft producers who had representatives among the 20 enrolled in the first course which was held for three weeks during the month of February. The second of the five sessions of three weeks each in the Spring Semester started on March 1 with the group attending class six days a week from 8:30 A.M. until 4:30 P.M. At the end of each of the sessions the "students" are presented with certificates.

Actually, the use of the word "class" is not entirely accurate because the sessions are mainly round-table discussions at which Professor Louis De Rose, chairman of the Management Department of Fordham's School of Business, is moderator. Using the sound theory that "20 heads are better than one", the group follows the case study method used by the Graduate School of Business Administration of Harvard University and employs those cases which formed the basis of the course at UCLA.



How Inco Precision Casting Cuts Production Cost

37%



Lapping inside diameter of Winchester jig cap. Inco precision casting cut production cost on both this small part and jig tip (upper left) by eliminating forging, broaching and most machining previously needed to make the parts.

Up at Winchester Repeating Arms Co., they used to forge the jig cap and tip from mild steel bar stock.

But they don't any more — the cost for forging, broaching and machining ran too high. Winchester engineers felt that better and less expensive parts could be made.

Precision investment casting seemed to be the answer. In their own pilot precision casting plant, Winchester engineers found that casting promised to reduce production time and make possible the use of a harder alloy.

So, they called in Inco to put the job on a production basis.

Inco casting specialists cast the parts in 18-4-1 high speed steel. Now, Winchester's production has speeded up sharply because these Inco precision castings eliminate all forging, broaching and machining operations except lapping, grinding and drilling two holes.

This makes possible an estimated cut in cost of more than 37%. And what's more, the parts give approximately three times longer service life.

To See How Others Cut Costs

Write for a free copy of "A Machinist's Nightmare Becomes a Designer's Dream."

Can You Cut Costs with Inco Precision Castings?

Whenever you have a part which is 6 inches x 5 inches or smaller, weighs under 3 lbs., requires starting tolerances as close as plus or minus .005 inch per linear inch, and needs 5 or more fabrication steps, there's a good chance you can save by having it precision cast.

What Alloys Can Be Precision Cast?

You may obtain precision castings from Inco in practically any metal from plain carbon steel to the new super alloys. And no matter what metal you specify, you get many advantages.

5 Advantages of Inco Precision Castings

- Lower fabricating costs
- Wider design latitude
- Higher alloys at lower cost
- Longer life with harder alloys
- Eliminates all or most machining

THE INTERNATIONAL NICKEL CO., INC.
67 Wall Street New York 5, N. Y.



Inco Castings

Precision, Sand, Centrifugal

For More Information Circle No. 671 on Inquiry Card—Page 17

MAY, 1954

423

CASTINGS
on the lighter side
by **WELLMAN**

Chances are no matter what business you're in ...
manufacturing household appliances ...
providing transportation for people or products ...
producing farm equipment, or textile equipment, or portable tools ...

there's a **WELLMAN** aluminum or magnesium casting somewhere in the picture.

For almost half a century we've been producing castings on the lighter side to fill a wide range of specifications — and we know what it takes to do it. We know the importance of constant research and laboratory control, of the finest production methods and equipment, and of experienced people in all departments.

Our four complete plants and staff of competent personnel are geared to meet any castings requirement. Let us hear about yours.

New catalog No. 53 on request.

Well-Cast **MAGNESIUM AND ALUMINUM CASTINGS**
Well-Made **WOOD AND METAL PATTERNS**



THE WELLMAN BRONZE & ALUMINUM CO.

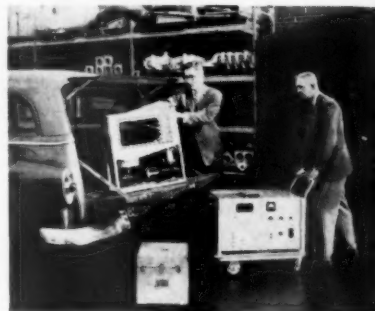
Dept. 17, 12800 Shaker Boulevard Cleveland 20, Ohio

For More Information Circle No. 672 on Inquiry Card—Page 17

Ultrasonic Metal Cleaning System Becomes 'Road Show'

The Detrex Corporation of Detroit has "taken to the road" to tell American industry the story of advances made in the use of ultrasonic energy for the precision cleaning of metal.

A year ago, Detrex announced that it had taken high-frequency sound energy out of the laboratory stage and had developed its fully-conveyorized Soniclean Process—an ultrasonic metal cleaning system for modern industry.



Headed by Kermit D. Collom, in charge of ultrasonics sales, installation and service, special teams of demonstrators will show ultrasonics in action with the aid of a carefully-assembled, complete kit including a small degreaser, a $\frac{3}{4}$ -kilowatt generator, solvent, plastic-coated baskets, magnetic field detector, microscope, variable-position transducer holders, tool kit, and other miscellaneous items.

The demonstrations will be made in hotels convenient to many firms in a given area, before meetings of technical societies, and directly in the plants of individual companies. Hotel demonstrations held so far have drawn representatives from firms hundreds of miles distant.

A full-sized degreaser, incorporating an ultrasonic cleaning cycle, has been installed in the Detrex laboratories in Detroit for demonstration purposes. Glass windows in both this machine, and the smaller, portable unit, permit spectators to watch sound energy at work.

1 1 1

Wealth of Screw Thread Data in New 52-Page Book

No other single publication contains all the screw thread information contained in its new handbook says Greenfield Tap & Die Corporation.

Each of its 52 pages is packed with essential data on screw (Please turn to page 428)

PRODUCT*	NOMINAL COMPOSITION	USES
MANGANESE ALLOYS cont.		
Low-Iron Ferromanganese	Manganese . . . 85 to 90% Carbon . . . approx. 7.00% Silicon . . . max. 3% Iron . . . max. 2%	For high manganese additions to certain non-ferrous alloys, particularly aluminum.
Manganese Metal	Manganese . . min. 95.50% Carbon . . . max. 0.20% Silicon . . . max. 1.00% Iron . . . max. 2.50%	Used both as deoxidizer and alloy in production of numerous non-ferrous metals and alloys.
"EM" Silico-manganese Briquets (Square Shape)	Manganese . . . 2 lb. Silicon . . . 1/2 lb. Total Weight . . 3 1/2 lb.	For adding manganese (with silicon) to cast iron in the cupola.
"EM" Ferro-manganese Briquets (Oblong Shape)	Manganese . . . 2 lb. Total Weight . . 3 lb.	For adding manganese (without silicon) to cast iron in the cupola.
SILICON ALLOYS		
50% Ferrosilicon Regular Grade	Silicon . . . 47 to 51%	Deoxidizer for most grades of killed or semi-killed steel. Blocking grade specially sized for maximum efficiency.
Blocking Grade	Silicon . . . 47 to 51%	
Low-Aluminum Grade	Silicon . . . 47 to 51% Aluminum . . max. 0.40%	
65% Ferrosilicon Regular Grade	Silicon . . . 65 to 70%	For furnace or ladle addition to steels.
Low-Impurity Grade	Silicon . . 61.50 to 66.50% Aluminum . . max. 0.50% Total Impurities . . max. 1.00%	Mainly for production of electrical sheet steel.
75% Ferrosilicon Regular Grade	Silicon . . . 73 to 78%	Deoxidizer and alloy for production of high-silicon spring and electrical sheet steel. Graphitizing inoculant for cast iron.
Low-Aluminum Grade	Silicon . . . 73 to 78% Aluminum . . max. 0.50%	
85% Ferrosilicon Regular Grade	Silicon . . . 83 to 88%	
Low-Aluminum Grade	Silicon . . . 83 to 88% Aluminum . . max. 0.50%	Enables melter to add higher percentages of silicon without chilling metal in ladle. Graphitizing inoculant for cast iron.
90% Ferrosilicon Regular Grade	Silicon . . . 92 to 95%	Permits large additions of silicon without harmful chilling effect.
Low-Aluminum Grade	Silicon . . . 92 to 95% Aluminum . . max. 0.50%	
Silicon Metal Regular Grade	Silicon . . min. 97 or 96% Iron . . . max. 1 or 2%	
Purified Grade	Silicon . . 99.70 to 99.90% Iron . . . 0.05 to .015%	For applications in non-ferrous industry requiring silicon of high purity.
Low-Calcium Grade	Silicon . . . min. 97% Iron . . . max. 1% Calcium . . max. 0.10%	For high-silicon aluminum alloys where calcium is detrimental.
Low-Aluminum Grade	Silicon . . . min. 98% Iron . . . max. 1% Aluminum . . max. 0.10%	For the production of silicon-copper alloys where aluminum is detrimental.
"SMZ" Alloy	Silicon . . . 60 to 65% Manganese . . 5 to 7% Zirconium . . 5 to 7%	Particularly strong graphitizing inoculant used in cast iron.
"EM" Silicon Briquets Large Size (Cylindrical or Brick-Shape)	Silicon . . . 2 lb. Total Weight . . 5 lb.	For adding silicon to cast iron in the cupola.
Small Size (Cylindrical Shape)	Silicon . . . 1 lb. Total Weight . . 2 1/2 lb.	

IF YOU HAVE A METALS PROBLEM

More than 50 different alloys and metals are produced by ELECTROMET. If you need help in selecting the proper alloys, be sure to consult one of ELECTROMET'S specially trained metallurgists and engineers. Address your inquiries to one of the offices listed at right.

ELECTRO METALLURGICAL COMPANY

A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

PRODUCT*	NOMINAL COMPOSITION	USES
SILICON ALLOYS cont.		
Magnesium-Ferrosilicon	Silicon43 to 47% Magnesium ..7.5 to 9.5%	For addition to cast iron and steel to obtain special properties.
TITANIUM ALLOYS		
Ferrotitanium	Titanium27 to 32% Carbonmax. 0.10%	For stabilized austenitic stainless steels and high-temperature metals.
Silicon-Titanium	Titanium40 to 50% Silicon45 to 50% Ironmax. 3%	For additions of titanium to steels or non-ferrous alloys.
Manganese-Nickel-Titanium	Titanium43 to 48% Nickelapprox. 25% Manganesemax. 8%	Deoxidization of nickel alloys.
TUNGSTEN ALLOYS		
Ferrotungsten	Conforming to A.S.T.M. Spec. A 144-50	For production of tool and die steels; also high-temperature alloys.
Tungsten Metal Powder Melting Grade	Tungsten ...min. 98.80% Total Carbon..max. 0.25%	Production of tungsten steels and cast tungsten carbide.
Calcium Tungstate	Tungstic Oxide. 68 to 72%	For making tungsten chemicals and other tungsten products.
Calcium Tungstate Nuggets	Tungstic Oxide. 68 to 72%	Making tool steels and high-temperature alloys.
Ammonium Paratungstate	Tungstic Oxide.min. 88.7%	Intermediate for tungsten products.
VANADIUM ALLOYS		
Ferrovanadium	Vanadium50 to 55% or 70 to 75% Carbon ..max. 0.20, 0.50, or 3.00% Silicon ..max. 1.50, 2.00, or 8%; and approx. 10%	Production of tool and engineering steels, high-strength structural steels, non-aging rimming steels, and wear-resistant irons.
Vanadium Oxide Fused	V ₂ O ₅86 to 89% Na ₂ Oapprox. 10% CaOapprox. 2%	For addition of vanadium to steel and for manufacturing catalysts.
Sodium Polyvanadate (Red Cake)	V ₂ O ₅approx. 85% Na ₂ Oapprox. 9%	For manufacture of vanadium compounds, including vanadium catalysts.
High-Purity Ammonium Metavanadate	V ₂ O ₅approx. 99.50% NH ₄ VO ₃min. 99%	
ZIRCONIUM ALLOYS		
12 to 15% Zirconium Alloy	Zirconium12 to 15% Silicon39 to 43% Carbonmax. 0.20%	This is a powerful deoxidizer. It also increases depth of hardening.
35 to 40% Zirconium Alloy	Zirconium35 to 40% Silicon47 to 52% Carbonmax. 0.50%	Deoxidizer for fine grades of alloy steels.
Nickel-Zirconium	Zirconium25 to 30% Nickel40 to 50%	For deoxidizing and degasifying nickel alloys.
"EM" Zirconium Briquets (Cylindrical Shape, Reddish Color)	Zirconium0.55 lb. Silicon1.90 lb. Total Weight5 lb.	For adding zirconium and silicon to cast iron in the cupola.
*Electromet," "EM," "Mansiloy," "Simplex," "SM," and "SMZ," are trade-marks of Union Carbide and Carbon Corporation.		

*Electromet, "EM," "Mansiloy," "Simplex," "SM," and "SMZ," are trade-marks of Union Carbide and Carbon Corporation.

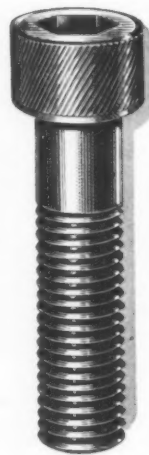
Birmingham 1, Ala. P.O. Box 196
Chicago 1, Ill. 230 N. Michigan Avenue
Cleveland 14, Ohio Union Commerce Building
Detroit 2, Mich. 6-240 General Motors Building
Houston 11, Texas 6119 Harrisburg Boulevard
Los Angeles 58, Calif. 2770 Leonis Boulevard
New York 17, N. Y. 30 East 42nd Street
Pittsburgh 22, Pa. Oliver Building
San Francisco 6, Calif. 22 Battery Street
In Canada: Electro Metallurgical Company, Division
of Union Carbide Canada Limited, Welland, Ontario

BLUE DEVIL

a better deal... for you

BLUE DEVIL SOCKET SCREW PRODUCTS

The reason why more and more users of socket screws are turning to Blue Devil is that they know they get exactly what they want . . . and exactly when they want them. Better see your Blue Devil distributor for the full story!



CAP SCREWS

"Diagonal Knurled" heads (for 1/2" diameter and smaller) assure easier hand assembly.



SET SCREWS
Supplied with ground threads thru 3/8" dia., where screw length equals or exceeds diameter. Six point styles.



FLAT HEAD CAP SCREWS
Flush counter-sink type. Tamper-proof. Eliminate slot stripping.



PIPE PLUGS
Precision die cut threads assure an excellent dry seal.



STRIPPER BOLTS
Accurately ground body diameters, undercut to permit tightening flush to shoulder.

SOCKET SCREWS EXCLUSIVELY!

Actual cross-section diagram shows how cold forming of Blue Devil socket head insures unimpaired fiber continuity.



SAFETY SOCKET SCREW COMPANY

6502 Avondale Avenue, Chicago 31, Illinois

SOLD ONLY THROUGH AUTHORIZED INDUSTRIAL DISTRIBUTORS

For More Information Circle No. 675 on Inquiry Card—Page 17

(Continued from page 424)

threads, unified and American. A large number of clear and precise illustrations aids in the presentation of the technical material.

The book is now available free of charge on request by individuals in responsible positions. Requests, however, should specify whether delivery in person or by mail is preferred. Because of the technical nature and wealth of material in the book, Greenfield prefers, wherever possible, to have it delivered. This permits one of its representatives or a qualified distributor's salesman to review its contents with the recipient.

Requests for copies should be made direct to the company's main office in Greenfield, Mass.

1 1 1

Small-Size Power Supply Has Minimum Magnetic Radiation

Precise regulation with low ripple and minimum magnetic radiation is furnished by the model No. 302 Power Supply, recently developed by Allied Engineering Div., Allied International Inc., North Norwalk, Conn. The new unit was designed to conserve bench space, as its dimensions are only 8" x 5" x 5 1/2". At the same time, it provides more power volumetrically than any other commercially available small power supply. It is claimed that no comparable unit of size or price range affords the same accuracy of regulation. Two outputs are available: (1) from 150-350 v at 0-80 milliamps with either positive or negative grounded to chassis; (2) from 0-150 v at 0-150 milliamps with positive internally connected to negative of output #1.

1 1 1

Atlanta Purchasing Reports Gains With New Systems

In his 1953 Annual Report to Mayor William B. Hartsfield and the Board of Aldermen, Ernest J. Brewer, purchasing agent, for the City of Atlanta, Ga., outlined the progress of the purchasing department.

Mr. Brewer pointed out how the streamlining of purchasing operations has contributed to more efficient and economical handling of purchase orders. In 1952, for instance, he stated that the department had spent \$4,201,146.71 in purchases by purchase order. During 1953, a more systematic handling of

(Please turn to page 432)

PURCHASING

for your production

screwdriving and nut running!

APEX

**MAGNETIC
SOCKETS**

Apex MAGNETIC Bit Holders and Sockets place screwdriving and nut running among the simplest and fastest of all production operations. Your tool operators gain a new dexterity that eliminates costly lost time and motion when starting screws and nuts. Apex MAGNETIC operation is at its best in those hard-to-reach spots, even permits working straight down when necessary.

A permanent magnet in bit holders and sockets holds the screw or nut firmly in position. Bit holders have a bit retaining ring to keep the insert bit in place. This patented Apex construction prevents insert bits from pulling out of holder when in operation.

Apex offers the speed, economy, ease and convenience of a complete MAGNETIC operation for every production screwdriving and nut running application. Start now to reduce your driving and fastening costs by getting the facts about Apex MAGNETIC screwdriving and nut running.

for Sheet Metal Screws



Available with broached openings from $\frac{1}{4}$ " to $\frac{5}{16}$ ", for driving sheet metal screws, hardened and commercial cap screws.

for Hex Head Nuts



Available with broached openings from $\frac{1}{4}$ " to $\frac{5}{16}$ ", for running hex head nuts, bolts, pal nuts, etc.

Apex Magnetic Sockets, for use with power, spiral and hand drivers, have a permanent magnet which holds the screw or nut firmly in position. Saves time in starting and fastening work in hard-to-reach areas, permits one-hand operation when necessary.

CATALOG 21

The authority on screwdriving and nut running tools, includes complete listing, specifications, prices. 56 illustrated pages. Write, on your company letterhead please, for your copy.

**APEX
TOOLS**

MAGNETIC bit holders, sockets

THE APEX MACHINE & TOOL COMPANY
1034 S. Patterson Blvd., Dayton 2, Ohio

No need to hold back any longer...

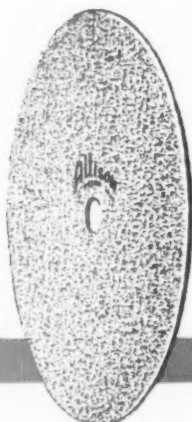


Adequate Titanium Supply Assured by Aircraft Production Resources Agency
January, 1954, Bulletin:
"It is evident that there will be more assurance of an adequate supply to meet most planned production programs in 1954."

Titanium

IS RARIN' TO GO!

... and the cutting of Titanium is no longer a problem, either. Allison abrasive cutting wheels can speed your company on its way to finding new uses for this wonder metal. Tests prove that abrasive cutting is *the only efficient and economical method* for cutting Titanium, as well as many of the tough "new" high-temperature resistant alloys.



The cutting of Titanium with Allison abrasive wheels is comparable in speed, quality and economy with that of cutting most grades of steel.

Tough Cut-Off Jobs Are Easy . . . with Allison.

YOURS, TOO, CAN BE ROUTINE.

The *best* way to cut many materials . . .
the *only* way to cut some.

Allison
ABRASIVE CUTTING WHEELS

THE ALLISON CO., 259 ISLAND BROOK AVENUE, BRIDGEPORT 8, CONN.

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(Continued from page 428)
requests increased the figure by \$492,913.71 without appreciably increasing operating costs.

A major point was the department's new system of handling "emergency orders". A more careful examination of conditions has reduced the number of such orders by more than a half-million dollars and made greater control possible by inserting many previous emergency orders into the normal purchasing work flow.

In summing up, Mr. Brewer thanked fellow purchasing agents in government and business for aiding him, through pamphlets, etc., in setting up his efficient purchasing department and maintaining it at its present peak.

Youngstown Sheet & Tube Begins Plastic Pipe Production

Full production of high-strength, corrosion-resistant plastic pipe for the petroleum industry is announced by The Youngstown Sheet and Tube Company, Youngstown, Ohio. Produced at Sand Springs, Okla., by The Fibercast Corporation in which Youngstown Sheet and Tube recently acquired an interest, the lightweight pipe offers important savings in transportation, installation and pipe replacement costs.

The new pipe is designed primarily to combat severe corrosion such as occurs in oil fields. This pipe is centrifugally molded of Bakelite polyester resins and Fiberglas mat in a process originally developed by Perrault Brothers, Inc., Tulsa, Okla.

This pipe weighs about one-fifth as much as steel, one-half as much as aluminum, yet has high tensile strength. Laboratory tests show that it will withstand stresses of more than 10,000 pounds per square inch. These tests also indicate high burst, collapse and beam strengths.

Sold under the trade-mark Fibercast, the new pipe will be distributed through three subsidiaries of Youngstown Sheet and Tube Company: Continental Supply Company, The Youngstown Steel Products Company, The Youngstown Steel Products Company of California.

**FOR FURTHER INFORMATION
ON PRODUCTS IN THIS ISSUE
PLEASE USE INQUIRY CARD
ON PAGE 17**

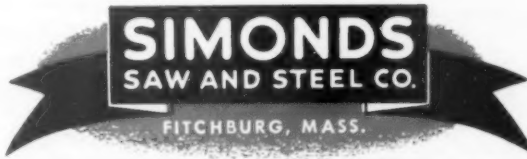


You
can feel
and

see the
difference

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SIMONDS "RED TANG" FILES



A "Red Tang" File cuts fast and easy — produces curled chips like the cutting tool on a lathe. You get the smoothest, cleanest filing you've ever seen . . . *without* the "elbow grease". A man can really get the "feel" of a "Red Tang", do *more and better* work in less time.

There's a "Red Tang" File for every machinist's job. Simonds makes only one quality — Grade A. Get prompt delivery from your Industrial Supply Distributor today.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon • Canadian Factory in Montreal, Que.
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y. • Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

For More Information Circle No. 679 on Inquiry Card—Page 17

Your **BEST** Buy
... regardless of
price!



WITT CANS and PAILS

WITT CANS and PAILS are designed and constructed to give you more service for your dollar. They withstand years of hard usage and abuse which wreck the ordinary container. Many WITT CANS and PAILS are still in excellent condition after 10, 15, yes even 20 years or more service. They're guaranteed to outlast 3 to 5 of the ordinary kind. Regardless of price, you get more for your dollar. Buy a WITT!

Compare WITT CAN and PAIL features with others on these points:

- STRAIGHT SIDES
- DEEP ROLLING CORRUGATIONS
- HEAVY GAUGE STEEL
- STRUCTURAL STEEL BANDS
- HOT DIP GALVANIZING
- PINCH-PROOF HANDLES
- STURDY LID

WITT CANS AND PAILS
HAVE THE "RIGHT" ANGLE

Witt Cans

"Originators of the Corrugated Can"

THE WITT CORNICE COMPANY

2127 Winchell Ave., Cincinnati 14, Ohio
Please send me your FREE Catalog.

Name

Firm

Address

City Zone State

For More Information Circle No. 680
on Inquiry Card—Page 17

Plastics Industry Groups Issue "Statement of Principles"

Officials of four major trade associations of the plastics industry have made public a "Statement of Principles By the Plastics Industry."

The statement was prepared by executives of individual companies in the industry as a statement of the principles which the individual companies propose to follow. Such a statement was considered by industry executives to be desirable in view of the phenomenal increase in applications and new uses of plastic materials. This growth is considered to represent a continuing challenge to manufacturers and processors to apply these materials in a manner that will best serve the interests of the public and industry.

Four Basic Points Enumerated

The new Statement of Principles is based upon practices and policies of most manufacturers and processors in the industry. It enumerates four basic concepts which "will bring to the industry and public alike all benefits, economies and satisfactions inherent in these versatile engineering and construction materials." The four basic points as set out in the Statement of Principle are:

1. To "understand thoroughly the properties and limitations of all plastic materials handled by us."
2. "Apply the correct plastic materials to all industrial end uses, designing and engineering them for maximum value, performance and safety."
3. To "use great care to select the correct plastic materials for all consumer items, designing them and engineering them to insure value, satisfaction, safety and pleasure to all users."
4. To "sell plastic materials, and all industrial and consumer items made therefrom, on the merits of the materials, application and design, and free from extravagant, insupportable claims."

The four Associations are making copies of the Statement of Principles available to their respective members, who are engaged in various phases of the plastics industry. All manufacturers and processors of plastic materials will be given an opportunity, on an individual company basis, to express or reaffirm adherence to the principles contained in the Statement. The program is on a purely voluntary, individual company, basis.

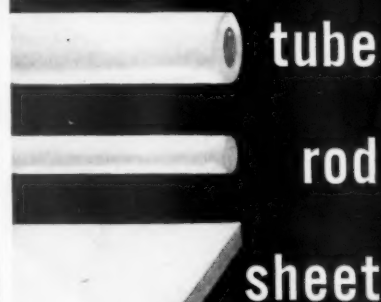
Now get

CERTIFIED

quality in
TEFLON*

with

Fluoroflex-T



Resistoflex will certify each shipment of "electrical grade" Fluoroflex-T products on six vital physical and electrical properties. Qualification tests are performed on all incoming Teflon powder to determine whether it will yield rods, tubes and sheets which are in conformance with specification AMS-3651 "Polytetrafluoroethylene."

So don't guess about Teflon quality. Make sure of optimum performance in Teflon by specifying electrical grade Fluoroflex-T. Contact us for more details.

*DuPont trade mark for its tetrafluoroethylene resin.

*Resistoflex trade mark for products from fluorocarbon resins.

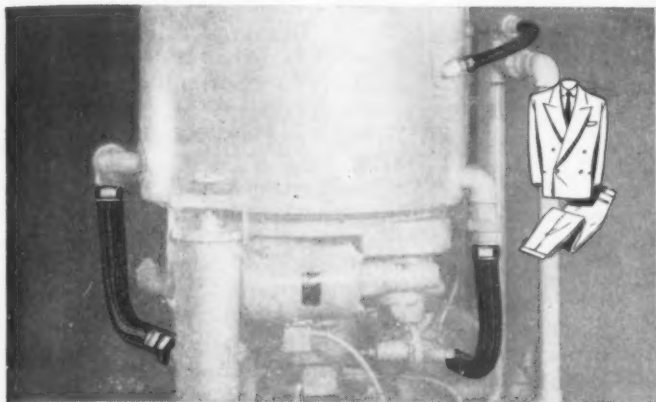
RESISTOFLEX
CORPORATION

Belleville 9, N. J.

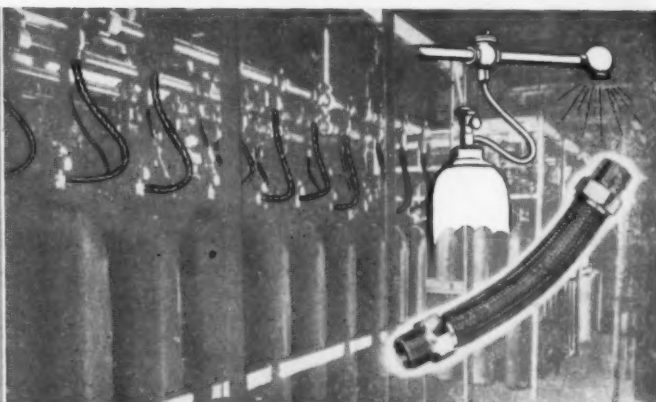
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For More Information Circle No. 707
on Inquiry Card—Page 17→

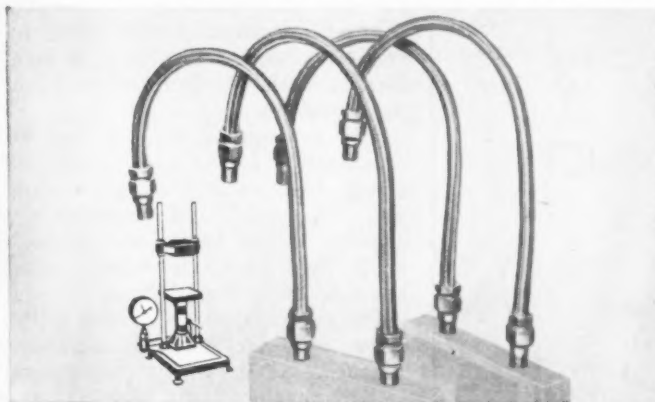
Pick an idea—lick a design problem...



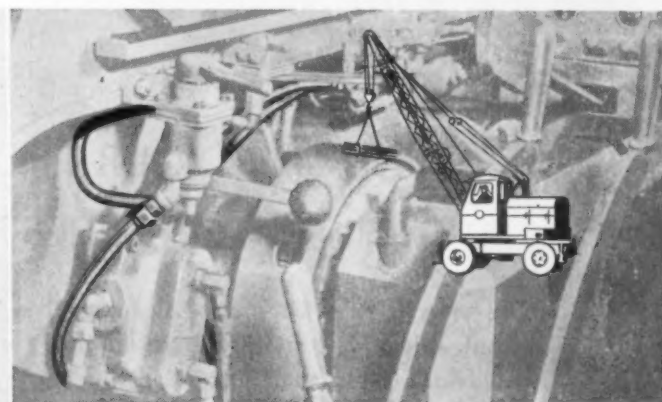
END VIBRATION AND LEAKAGE. Titeflex® metal hose, used as fill and drain lines of SEC Synthetic Cleaning Units, kills vibration and prevents solvent leakage at fittings. Tough, wear-and-corrosion-resistant Titeflex is just as effective in handling steam, oil, lubricants, fuels, gases, brine, acids, compressed air or oxygen. Design and construction of Titeflex assure trouble-free performance. Excellent for projects involving extreme configurations.



CONTROL CRITICAL PRESSURES. How would you connect 280 cylinders of fire-extinguishing carbon dioxide at 850 psi to line? Walter Kidde & Company licked this problem with Titeflex flexible metal hose which met all insurance standards and withstood rigid application requirements. Titeflex also conveys hundreds of different fluids under as many different temperature and pressure conditions. Resists corrosion, vibration, physical abuse.



CONDUCT STEAM SAFELY. Plates for Carver Laboratory Press carry steam up to 200 psi (nearly 400°F.) for heating—water for cooling. The connections are flexible, pressure-safe Titeflex. Braiding gives extra strength. Added problems of vibration, pulsation, continuous movement, corrosion or abrasion make Titeflex invaluable in scores of other applications.



FIGHT FATIGUE AND WEAR. Titeflex metal hose eliminated maintenance on air control lines of Unit Mobile Cranes. All-metal construction, with braiding woven directly upon the hose, provides great strength and resistance to vibration, corrosion, wear and abuse. Flexibility of Titeflex permits simplified assembly even where space configurations are problems.

THE USES FOR TITEFLEX® seamed flexible metal hose and Uniflex seamless flexible metal hose are limited only by engineering ingenuity. And Titeflex design engineers—working *with* customers—develop new applications daily. Somewhere in your plant or on your products Titeflex can improve operation and maintenance—or simplify a design problem. Our new 48-page *Metal Hose Catalog No. 200* shows you how and why. To get your free copy, simply mail the coupon.

Let Our Family of Products Help Yours

✓ Check products you are interested in.



☐ SEAMED AND SEAMLESS METAL HOSE



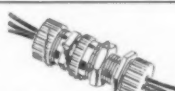
☐ PRECISION BELLOWS



☐ IGNITION HARNESS



☐ IGNITION SHIELDING



☐ ELECTRICAL CONNECTORS



☐ RIGID AND FLEXIBLE WAVE GUIDES



☐ WIRING SYSTEMS



☐ FUSES

TITFLEX, INC.

253 Frelinghuysen Ave.
Newark 5, N.J.

Please send me without cost
information about the products
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TITLE _____

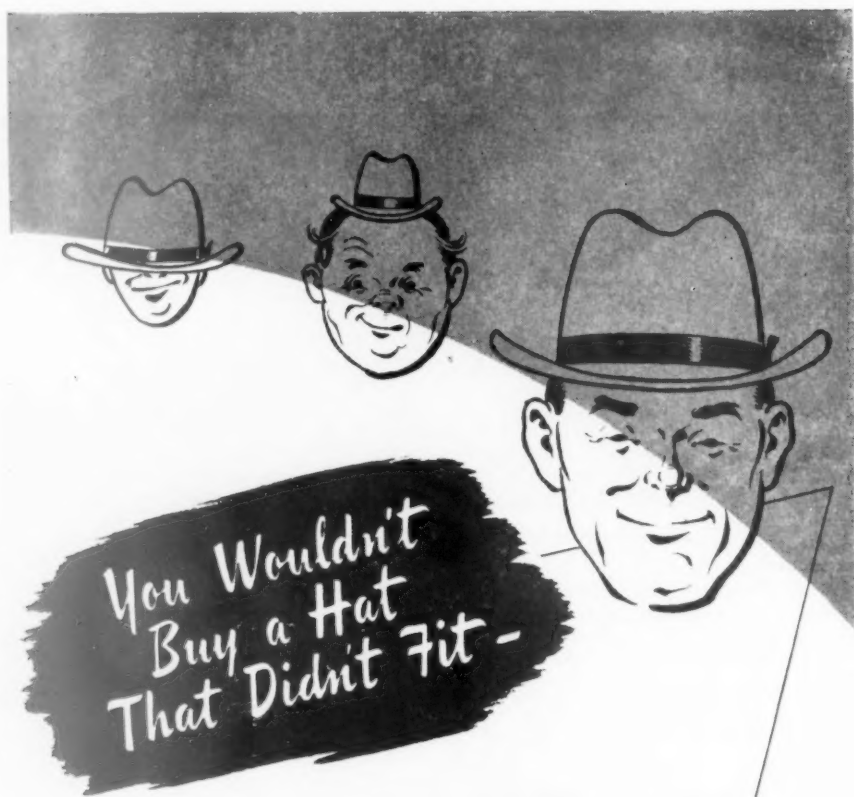
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WOULD YOU SHIP YOUR PRODUCT IN A MISFIT CONTAINER?

The wrong size of hat may look funny, but the wrong shipping container is no laughing matter. More often than not, it is the cause of excessive shipping losses, damage claims and transportation charges.

SUPERSTRONG laboratories are maintained for the design of perfectly balanced boxes and crates that will enable a product such as yours to be shipped safely, compactly and economically.

Nearly a century of experience and dependability recommends SUPERSTRONG as a source of known quality for your shipping container requirements.

WIREBOUND BOXES and CRATES
WOODEN BOXES and CRATES
CORRUGATED FIBRE BOXES
BEVERAGE CASES
STARCH TRAYS . . . PALLETS



RATHBORNE, HAIR and RIDGWAY BOX CO.
1440 WEST 21st PLACE • CHICAGO 8, ILLINOIS

For More Information Circle No. 684 on Inquiry Card—Page 17

Pamphlet Tells What Small Business Administration Is, Does

An informational pamphlet, "Small Business Administration—What It Is, What It Does", is now available for distribution, it was announced today by Wendell B. Barnes, Acting Administrator of SBA.

The fourteen-page brochure points out that in contrast to predecessor agencies, the Small Business Administration is responsible for assisting all small business in the Nation, not defense contractors alone. SBA also has been assigned the function formerly held by the Reconstruction Finance Corporation of granting disaster loans.

The Small Business Administration, created by the Small Business Act of 1953, is the first comprehensive peacetime independent Governmental agency in history created for the sole purpose of advising counselling, assisting and protecting small business enterprises, in conformity with the declared policy of the Congress.

The new pamphlet describes the organization of the agency, also its prime objective of providing technical, managerial and financial assistance at the local level through its 30 field offices, in solving small business owners' problems.

The pamphlet explains each of the major SBA programs—financial assistance, procurement assistance, and management and technical assistance.

1 1 1

Direct Operating Sequence Valves for 25-200 psi Circuits

A line of direct-operating controls announced by the Denison Engineering Co., Columbus, Ohio, includes a complete line of direct operating sequence valves suitable for operation in circuits from 25 to 200 psi. The line provides for interlocked hydraulic operations, insuring close synchronization of primary and secondary operations. The pressure setting of the valve is easily adjusted. When system pressure reaches the pressure setting of the valve, the valve diverts oil to the secondary circuit. Pressure build-up in the system brings immediate action of the pilot piston in the secondary circuit which may be adjusted to shift at any pressure from 25 to 2000 psi. The valves are supplied in threaded body style in 1/2", 3/4" and 1 1/4" sizes.

For More Information Circle No. 685
on Inquiry Card—Page 17→

U N I O N

ANNOUNCES

COUNTERBORES

WITH INTERCHANGEABLE PILOTS

Out of significant knowledge gained in making a wide variety of high precision cutting tools comes Union's High Speed Steel Counterbore with Interchangeable Pilots. Available in standard and aircraft designs. Call or write your Union Distributor for full information.



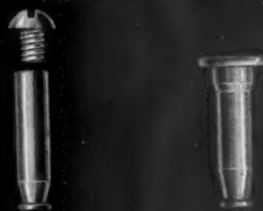
UNION TWIST DRILL COMPANY • ATHOL, MASSACHUSETTS

End Mills Milling Cutters Gear Cutters Twist Drills Hobs Reamers Carbide Tools

OWNERS AND OPERATORS OF: S. W. CARD MANUFACTURING CO. DIVISION, Mansfield, Mass.
BUTTERFIELD DIVISION, Derby Line, Vermont and Rock Island, Quebec

YOUR DISTRIBUTOR IS READY TO SERVE YOU PROMPTLY FROM FULL STOCKS

**Which part cut costs 78%
and makes customers far happier?**



The two-part fastener at left was used to hold the louvers in a line of fluorescent lighting fixtures. The cost of this fastener was high — \$35.00 per thousand — and the customer was left with the time-consuming job of mounting the louvers when the fixture was installed.

The single COLD FORMED part at right now replaces the two-part machined fastener — costs only \$7.50 per thousand — and enables the manufacturer to ship the fixture completely assembled, with every louver already in place!

The dollar savings have already mounted into the thousands. The gain in customer good-will is priceless!

How many thousands of dollars can COLD-FORMING save you?

Savings like this aren't at all unusual. Milford's COLD FORMING methods are making equally substantial savings for manufacturers throughout American industry . . .

Because Cold Formed Parts Cut Costs:

- 1) They're formed from wire stock without waste or scrap!
- 2) They're produced on high speed automatic equipment!
- 3) They're frequently designed for high speed automatic or semi-automatic application!

Thanks to long experience in

COLD FORMING, Milford engineers, designers and product research experts are ready and able to help you cut small-parts costs substantially. They bring to your service Milford's leadership and know-how in the manufacture of semi-tubular, tubular and special rivets, as well as automatic rivet-setting machines.

So put us to work for you. Do it before, not after, your design is frozen. Chances are we can help you effect some major savings—both in time and money!

Write or phone nearest Milford Plant or Sales Representative!



MILFORD RIVET & MACHINE CO.

MILFORD
CONN.

NORWALK
CALIF.

ELYRIA
OHIO

AURORA
ILLINOIS

HATBORO
PENNA.

For More Information Circle No. 686 on Inquiry Card—Page 17

Machine Threads Transmission Shafts at 400 Parts Per Hour

Main transmission shafts with a $\frac{7}{8}$ -16 U. 2A thread $11\frac{1}{32}$ " long can now be threaded at a rate of 400 parts an hour. This is what the Murchey Division of the Sheffield Corporation, Dayton 1, Ohio claims for a special machine. It incorporates two "Precision-Pak" self contained threading units, each having



automatic cycling, precision lead screw, smooth, accurate spindle travel, and fast spindle return. An air operated collet type fixture in line with each threading unit is used to hold the part during threading. Each threading unit has an internal threading capacity ranging from $1\frac{1}{8}$ " to 4" and an external capacity from $\frac{3}{4}$ " to $3\frac{1}{2}$ ". Spindle speeds are from 38 to 346 rpm in 15 rpm increments.

1 1 1

New Type Dry-Charge Battery to Be Made by Gould-National

Gould-National Batteries, Inc., will make a new type of dry-charge electric storage battery, the first of its kind to be sold in the United States.

The feature of the new type of dry-charge battery is its ability to retain its initial charge over much longer periods of time than ever before possible, particularly under adverse temperature and moisture conditions. This quality may eliminate in large part the need for charging equipment which must now be on hand in so many of our worldwide military installations.

"The new principle involved may be applied to all batteries from the submarine type to smaller sizes," according to Albert H. Daggett, president of Gould.

The combined purchases of dry-charge batteries by the various departments and services of the United States Government far exceed those of any private industry.

"The savings in charging equipment alone should amount to millions of dollars for our government," said Mr. Daggett. "This, however, is only one aspect of the comparative advantage held by the new dry-charge battery over the type now available," he continued. "When needed for use, both types require the introduction of sulphuric acid, but the 'soaking period' for this new Gould dry-charge is a fraction of that required by the present battery to make it ready to deliver current."

1 1 1

Double-Melting Process Produces 100 Lb. Titanium Alloy Ingots

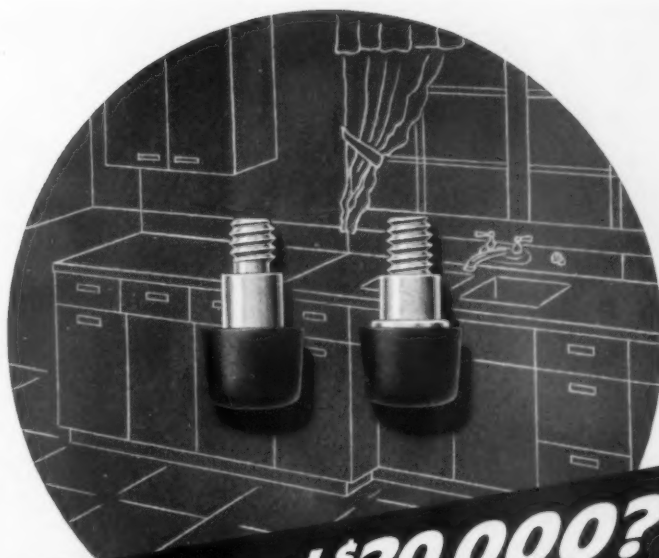
Titanium-alloy ingots weighing up to 100 pounds can now be produced by a double melting process worked out at Armour Research Foundation of Illinois Institute of Technology, Chicago.

The process can easily be applied to commercial-scale production, according to Foundation spokesmen. Production of these alloys is rapidly becoming important, they add, because their light weight and high strength make them valuable in jet aircraft construction.

The process starts with titanium and alloying metals, such as aluminum and silicon, fed into a non-consumable-electrode arc melting furnace. This produces an ingot that contains the desired combination of metals but is not homogeneous enough to be of much use. Alloying elements are likely to be segregated in parts of the ingot.

The next step is to forge this ingot into a rod, which is then remelted as a consumable electrode in another arc furnace. Fed in vertically through the top of this furnace, it melts in an electric arc playing between it and the pool of molten metal just below it. Because all of the metal must pass through the intense heat of the arc and because a larger and hotter molten pool is maintained than is possible with the other furnace, the alloying metals get dispersed throughout the mixture. A homogeneous alloy results.

Foundation research men say that larger ingots than the six-inch-diameter ones they are now producing could be achieved by increasing the power used. The only limits on size, they say, are the physical limits on the distance the ingot can be withdrawn and the diameter of the molten pool that can be maintained.



Which part saved \$20,000?

They're practically look-alikes. Both were designed to serve as rubber-tipped leveling screws on the bottom corners of metal kitchen cabinets. The part on the right does much the better job — its special collar prevents the rubber cap from slipping over the shank. Produced on COLD FORMING equipment, it costs \$6.00 less per thousand than the screw machine part previously used!

Result: Savings of over \$20,000 a year for one of America's leading makers of kitchen cabinets!

COLD FORMING and Good Design turned the trick!

Your annual investment for fasteners and small special parts is undoubtedly substantial in your plant. Savings that total thousands of dollars are not unusual when such parts are COLD FORMED without waste or scrap on high-speed automatic equipment and designed for high-speed automatic or semi-automatic application.

Thanks to long experience in COLD FORMING, Milford engineers, designers and product

research experts are ready and able to help you cut small-parts costs substantially. They bring to your service Milford's leadership and know-how in the manufacture of semi-tubular, tubular and special rivets, as well as automatic rivet-setting machines.

So put us to work for you — on products you're making now or those you're planning to produce. Chances are we can help you make some major savings — in both time and money!

Write or phone nearest Milford Plant or Sales Representative!



MILFORD RIVET & MACHINE CO.

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For More Information Circle No. 687 on Inquiry Card—Page 17

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DETROIT, Mich., Lorain 7-3380
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Idlewood 0424

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Earle M. Jorgensen Co., Lucas 0281
Reliance Steel Company, Adams 3-3193

MIAMI, Fla., Phone 65-1562
Robinson Bros., Inc.

MILWAUKEE, Wis., Evergreen 4-6000
Korhmel Steel & Aluminum Corp.
of Wisconsin

MINNEAPOLIS, Minn., Geneva 2661
Korhmel Steel & Aluminum Company

NEW ORLEANS, La.
Orleans Steel Products Co., Inc.
Raymond 2116
Standard Brass & Mfg. Co., Auburn 1381

NEW YORK METROPOLITAN AREA
A. R. Purdy Co., Inc.
Lyndhurst: Webster 9-8100
New York: Chelsea 3-4455
Newark: Humboldt 2-5566
T. E. Conklin Brass & Copper Co., Inc.,
Walker 5-7500

OAKLAND, Calif.
Gilmore Steel & Supply Company
Glencourt 1-1680
Earle M. Jorgensen Co., Higate 4-2030

OMAHA, Nebr., Atlantic 1830
Gate City Steel Works

ORLANDO, Fla., Phone 5-1515
Robinson Bros., Inc.

PHILADELPHIA, Penna., Delaware 6-5400
Hill-Chase & Company, Inc.
Allentown: Hemlock 2-8077
York: York 5790

PHOENIX, Ariz., Phone 8-5331
Arizona Hardware Co., Inc.

PITTSBURGH, Penna., Hemlock 1-5803
Follansbee Metal Warehouses

PORT ARTHUR, Tex., Phone 5-9377
Standard Brass & Mfg. Co.

PORTLAND, Ore., Tuxedo 5201
Eagle Metals Inc. of Oregon

SAN FRANCISCO, Calif., Klandike 2-0511
Gilmore Steel & Supply Company

SEATTLE, Wash., Lander 9974
Eagle Metals Company

SHREVEPORT, La., Phone 2-9483
Standard Brass & Mfg. Co.

SPOKANE, Wash., Keystone 0586
Eagle Metals Company

SYRACUSE, N.Y., Syracuse 72-6677
A. R. Purdy Co., Inc.

TULSA, Okla., Phone 85-1511
Earle M. Jorgensen Co.

WICHITA, Kans., Phone 7-1208, 7-1209
General Metals Incorporated

WILKES-BARRE, Penna., Butler 7-3013
Hill-Chase & Company, Inc.

WORCESTER, Mass., Worcester 7-4521
Merrill Aluminum Corporation

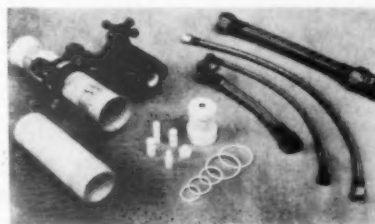
Howard Opens Precision Casting Division on Coast

Howard Foundry Company, Chicago, is opening a new "lost wax" precision investment casting division in Los Angeles. Close tolerance, complex ferrous castings requiring little, if any, machining are to be produced. The new division will be staffed by personnel from the company's new Milwaukee plant, now in full production, although additional building expansion won't be completed until early April. The added production area will house a new type titanium casting furnace for the first commercial operation of its kind by the company's new subsidiary, Titanium Casting Corporation.

1 1 1

Resistoflex Corporation Shows Line of Plastic Hose and Pipe

Resistoflex Corp., Belleville, N. J., recently unveiled its new "Fluoroflex"-T line of plastic products comprising hose and pipe which it says is chemically inert to highly corrosive liquids.



In addition, the new "Fluoroflex"-T plastic products, which are made from DuPont's fluorocarbon resin known as Teflon, are light in weight and resistant to high and low extremes of temperature.

The new hose, first of its kind in the plastics industry, is already in production on a pilot-plant basis to meet immediate needs of the aviation industry for handling the new synthetic oils and fuels developed for use on the latest design jet engines.

Commercial production of "Fluoroflex"-T hose and pipe will be expanded as rapidly as possible to meet the needs of the chemical processing, food processing, pharmaceutical, petrochemical, and other industries confronted with the problem of handling destructive corrosive fluids at high operating temperatures.

It was emphasized that the new line of products is able to handle practically all corrosive liquids at temperatures from minus 100 de-
(Please turn to page 450)

PURCHASING AGENTS SPECIFY DARNELL CASTERS FOR THESE FEATURES

STRING GUARDS...

Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED...

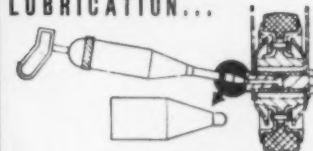
by the Udylyte process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS...

a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.



LUBRICATION...



all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerik fittings are provided for quick grease-gun lubrication.



Where Protection
Is Required Use
Darnell
**RUBBER
BUMPERS**

A complete, new line of quality bumpers now available—angle, doughnut and strip type bumpers—mean no more marred, ugly door facings, walls and equipment. They pay for themselves many times over. Easily installed on any equipment.

DESCRIPTIVE FOLDER ON REQUEST

Ask for
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For More Information Circle No. 691
on Inquiry Card—Page 17

IN ONE MINUTE'S TIME

AWS Class E-6012
electrode produced
this fillet

THIS MUCH MORE WELD

was made in the same time
in the same steel plate



with the new



EASYARC 12

Actual length of welds: E-6012 — 5-1/16", Easyarc 12 — 12".
Current settings: 230 amps AC for E-6012; 275 amps AC for Easyarc
12. Both welds made in 1/4" plate with 3/16" dia. electrodes.

Airco's new EASYARC 12 actually welds mild steel in about half the time it takes with conventional AWS Class E-6012 and E-6013 electrodes. EASYARC 12 has a completely new type of flux coat that contains a high proportion of powdered metal. This lets you use higher currents without breakdown of the coating, and vastly increases deposition rates, since the flux itself adds metal to the weld.

Besides being fast, EASYARC 12 is far easier to handle. Welds are made by "dragging" the electrode along the joint. Spatter is almost negligible. And EASYARC 12's slag is practically self-cleaning.

For complete information and prices — get in touch with your Airco office or dealer right now.

AIR REDUCTION

60 East 42nd Street • New York 17, N. Y.

*Divisions of Air Reduction Company, Incorporated
with offices and dealers in most principal cities*

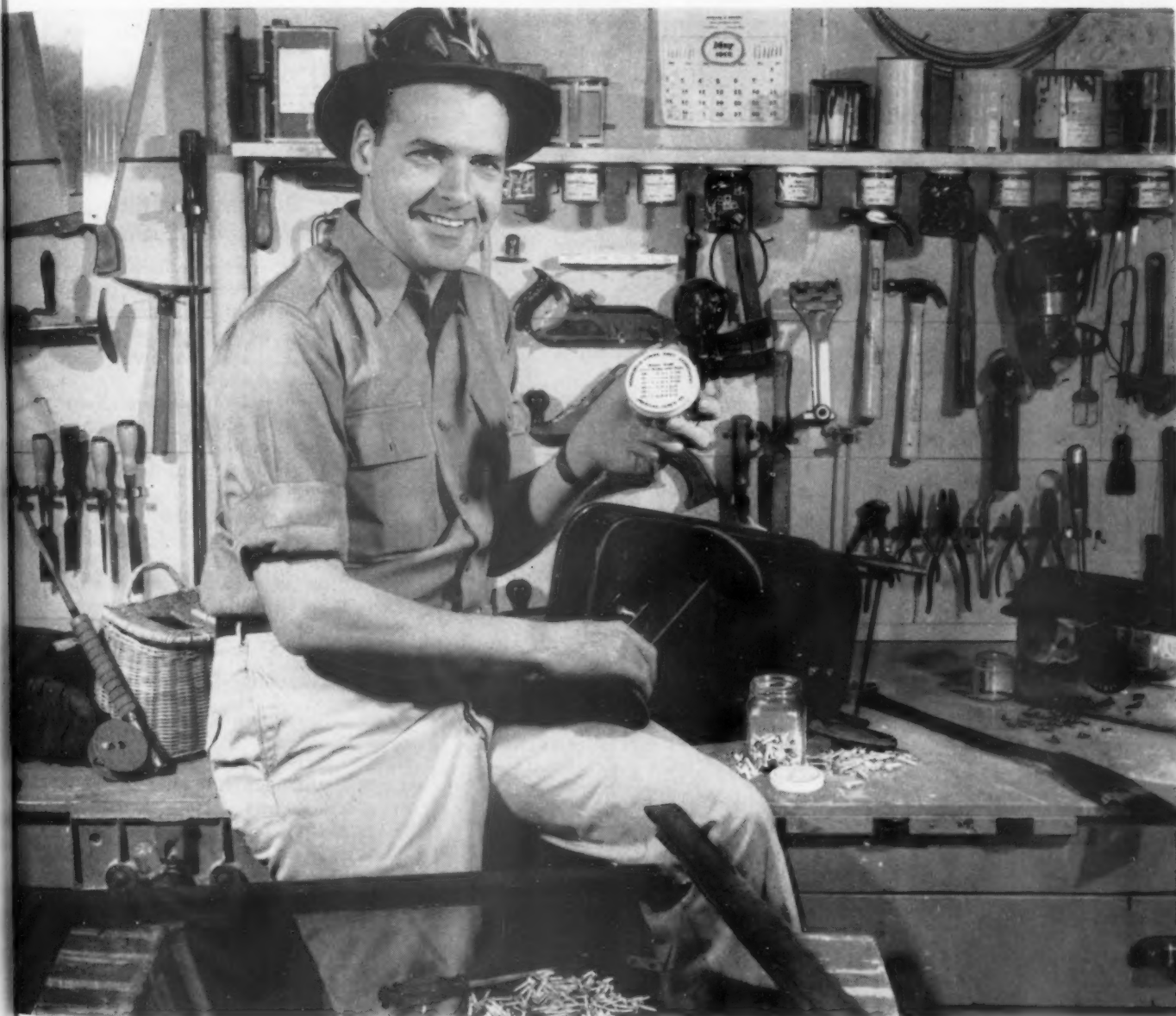
Air Reduction Sales Company
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at the frontiers of progress you'll find



Smart Operators Use **AMERICAN SCREWS**

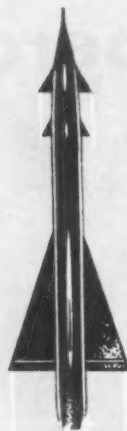
← in the Factory...in the Home →



Going fishing? Yessir! Thanks to American's full-line Jar Assortment of Wood Screws, Sheet Metal Screws and Stove Bolts. In Dad's modern home workshop, Junior's wagon and Mother's appliances will be repaired . . . household chores will be done . . . and all in

plenty of time for Dad to enjoy some weekend fishing. So no wonder that he's glad he has American as a dependable source of supply for his factory . . . and that he's delighted with these handy jars that preserve more of his own time for himself! How about *you*?

- ▶ 80,000 feet up and at speeds faster than sound
- ▶ Riding on Guided Missiles
- ▶ In VHF, UHF and Microwave Circuits
- ▶ In Atomic research and production
- ▶ Handling "Impossible" Chemicals



...You will find
U. S. G. quality-controlled
TEFLON and KEL-F
materials, components,
fabricated parts
and special
Assemblies
at work.

Strange products for a Gasket Company?

That is why you should know more about the research development and manufacturing "know-how" of this pioneer in the application of Fluorocarbon Plastics—the "wonder materials", duPont TEFLON and Kellogg's KEL-F.

Write for your copy of "Our Products in Your Picture", a vest-pocket outline of the diversification of this company's products and services to industry.

A partial list of U.S.G. Products:

- Gaskets and packing that are immune to all chemicals (except molten sodium and fluorine). Are non-contaminating. Out-last other materials several times over.
- No-lubricant, non-contaminating bearings and bushings.
- Chemical-proof pump impellers and other machine parts.
- High temperature, high frequency, high voltage insulating materials (sheets, rods, tubing, tape, cylinders, bars, molded and machined parts for the electronic and electrical industries).
- Teflon "Alloy" materials that possess most of the pure polymer's characteristics and offer additional desired physical or electrical characteristics.
- Solderable Teflon and Cementable Teflon.
- Electronic components including miniature tube sockets, crystal sockets, connectors, stand-off insulators, feed-through insulators and terminals, trimmers, etc.
- Perforated Teflon for filtering and sifting chemicals that would attack other filtering media.
- Kel-F Raschig Rings and retaining discs for reaction towers.



(Continued from page 445)

grees up to at least 450 degrees Fahrenheit without any physical, structural or visual changes.

Other properties of the "Fluoroflex"-T line are high tensile strength and practically unlimited shelf life.

At present "Fluoroflex"-T hose is available in a range of seven sizes from 1/4 inch through 1 inch. Three additional hose sizes will soon be added to the line. The laminated pipe is available in 1 inch, 1 1/2, 2, 3, and 4 inch diameters. Special sizes can be produced where requirements are large enough to warrant it.

1 1 1

'Judging Purchasing Efficiency' Subject of SBA Leaflet

Wendell B. Barnes, administrator of the Small Business Administration, announced the issuance of a new leaflet explaining how small business firms can improve their purchasing operations.

The new leaflet, **Judging Your Purchasing Efficiency**, is Number 45 in SBA's series of Management Aids for Small Business and is available on request at all SBA field offices.

Profit leaks are often attributable to faulty purchasing operations, according to the leaflet, which emphasizes the need for the closest possible contact between purchasing and other company departments.

The leaflet says:

"Close relations with vendors and a knowledge of market conditions, manufacturing operations, and financial policies can enable purchasing executives to contribute practical help in both short and long-range planning."

Purchasing should not be an isolated "back-office" job, the leaflet adds. "It affects the whole company and other internal activities. For that reason, a purchasing officer should be in close contact with other company departments as well as with salesmen. He should keep informed on general business and economic trends. Purchasing affects financial policy and purchasing agents can sometimes suggest possible new product lines and ideas on how to build goodwill."

The leaflet contains a list of basic purchasing questions; a table of tangible purchasing factors; and a purchasing evaluation analysis chart for improving purchasing operations.

For More Information Circle No. 695 on Inquiry Card—Page 17

How a little talk
(with the right person) →



The "right person" was E. F. Aschemeyer, at left, Standard Oil lubrication specialist. His practical experience and training helped Elkin solve their problem.

stopped a lot of
← **chattering**

Chattering and scoring of ways was causing trouble for the Elkin Tool and Manufacturing Company of Detroit. The trouble was noted on a big planer operating under extremely heavy loads. A Standard Oil lubrication specialist recommended the use of STANWAY #95, a very stable oil having extreme oiliness and containing a tackiness agent. Result: smooth operation, complete elimination of chattering and scoring.

STANWAY Industrial Oils were developed to meet the extreme oiliness requirements of certain machine tools which customarily operate under very heavy loads. STANWAY Oils are part of a complete line of industrial oils, cutting oils and coolants that serve all industry.

No matter how "special" your problem may be, there's a Standard Oil product to solve it. There's also a near-at-hand Standard Oil lubrication specialist to help you select and apply the right one. To obtain his services call the Standard Oil office nearest you, or write Standard Oil Company, 910 S. Michigan Ave., Chicago 80, Ill.



STANDARD OIL COMPANY
(Indiana)

**STANWAY
INDUSTRIAL
OILS**

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BRAINARD WELDED TUBING

Easily fabricated to your design

• There's practically no limit to the design requirements you can meet with Brainard Welded Steel Tubing. You can upset, swage, spin, flange, flatten, taper, or otherwise cold form it. It's an economical structural material—and pound for pound carries more load than any other shape.

Investigate the advantages of Brainard Welded Steel Tubing for your products. Write Brainard Steel Division, Dept. FF-5, Griswold Street, Warren, Ohio. An integrated producer; offices throughout the U. S.



For More Information Circle No. 700 on Inquiry Card—Page 17

Improved Wire Stripper Has Interchangeable Cutters

An improved wire stripper with interchangeable cutters for stripping 12 to 14 gage solid or stranded wire or 300 ohm twin lead-in wire is being marketed under the trade name "Whiz Wire Stripper." It is exceptionally light in weight (12 oz) with a lock-open feature that holds the jaws open automatically so the wire can be removed after



stripping without crushing. The jaws are released instantly with a finger tip touch of the lower handle, making it unnecessary to shift the grip on the tool while resetting. This makes the tool ideal for production line applications, as well as for general shop use. The tool has hardened steel, easily replaceable, precision milled cutters. The manufacturer is Rockford Wire Stripper Co., 2323-23rd Ave., Rockford, Ill.

AEC Plans Building of Small Nuclear Power Plant

The Atomic Energy Commission is investigating the possibility of building a small nuclear power plant as the prototype of a "package" power plant for military use. The AEC is undertaking this project at the request of the Department of Defense and with the collaboration of the Corps of Engineers of the Army.

The plant being considered is based on a preliminary design by Oak Ridge National Laboratory. The reactor would use enriched uranium fuel and be moderated and cooled by ordinary water under pressure. This particular approach was selected because it represents a type that could be built with existing technology. The reactor would be constructed at an appropriate military base or an AEC installation in the continental U.S.

The purpose of building a prototype plant is to demonstrate that the design selected is suitable for military requirements, to determine the exact economic and operating characteristics of the plant and provide a training facility for military engineers, operating crews, and maintenance personnel.

For maintenance—or new assemblies—your best buy is Standardized BOSTON GEAR Products *from Stock!*

Cost-wise buyers from coast to coast agree that the name "BOSTON" on Gears or other Standardized Products means extra value. It's a name they know and trust for many reasons . . .

1. **LEADING SPECIALIST** in Standardized Gear Products for 75 years.
2. **LARGEST PRODUCER** of Standardized Stock Gears, serving 250,000 customers.
3. **HIGHEST QUALITY** Assures immediate interchangeability, anytime, anywhere.
4. **LOWER COST** You get longest service life from BOSTON GEAR Products and avoid downtime losses.
5. **5112 STOCK ITEMS** Broadest range of types and sizes in Standardized Gears.
6. **NEARBY STOCKS** At leading suppliers . . . the industry-wide network of 92 Authorized BOSTON Gear DISTRIBUTORS . . . with stocks totaling \$10,000,000.

Only BOSTON GEAR offers *all* these essentials for trouble-free planning and servicing of any power transmission assembly. Compare for quality — compare for economy — compare for convenience — you'll find it pays to specify BOSTON GEAR, for new assemblies or maintenance replacements.

Ask your nearby Distributor for information on any gear problem . . . he has a factory-trained specialist ready to help you. Boston Gear Works, 60 Hayward St., Quincy 72, Mass.



BOSTON Gear®

FOR PROMPT DELIVERIES

AT FACTORY PRICES

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the BOSTON Gear Distributor nearest you.

C/R JAW-HEAD



The best "soft"
hammer your
money can buy!

Tough, resilient water buffalo faces deliver plenty of power with full protection for delicate parts and finishes. Faces are easily replaced, and comfortable Safety-Flare handle gives you non-slip grip. Work goes better with a C/R RAWHIDE Jaw-Head. See for yourself.

CHANGE FACES
IN SECONDS



Available from leading industrial suppliers. Also C/R Rawhide mallets and Rawhide mauls. For further information write Dept. 22.

CHICAGO Rawhide MFG. CO.

1301 Elston Ave., Chicago 22, Ill.
In Canada: Super Oil Seal Mfg. Co., Ltd.,
Hamilton, Ontario

For More Information Circle No. 703
on Inquiry Card—Page 17

New Transducer Is Accurate To Within $\pm 1/4\%$

A new transducer, the Dyna-former Pressure Cell, has been introduced by the Foxboro Co., Foxboro, Mass. Highly sensitive, the new element converts fluid pressure into a proportional a-c voltage, which is measured in terms of pressure by an electronic resistance Dynalog instrument. The cell is accurate to within $\pm 1/4\%$ at any point and is protected against overrange to 150% of its rating. A self-contained adjustment enables the user to match the zero of the transducer to that of the instrument. Any pressure range between 0 to 30 in. Hg and 0 to 10,000 psi is available. All parts are enclosed in a splash-proof, rubber-gasketed, cast-aluminum case with a pressure-tight cable connection.

Extrusion Process Produces Better, Cheaper Shells

Development of an improved hot metal working process affecting significant cost reductions in manufacture of mortar and artillery ammunition has been revealed by Scaife Company of Oakmont, Pa.

This development, a modification of the Ugine-Sejournet extrusion process using glass as lubricant, was first applied to the 4.2-inch mortar shell which Scaife has manufactured since the beginning of World War II as a three-piece assembly of seamless tubing and machined components.

The new method produces this shell in one piece from a simple billet and, according to Ordnance Corps, with "improved quality and significant savings in cost and materials". Important features of the development are in the substitution of readily available billet stock for seamless steel tubing, a critical material in times of emergency, as well as savings of 25 per cent in steel used.

"In our work on hot extrusions," Scaife's president, Mr. A. V. Murray, points out, "we have combined certain advantages of both conventional hot forging and cold extrusion processes. Hot forging permits drastic reforming of material in a single press operation but generally with poor dimensional control; cold extrusion provides close dimensional control but requires many press operations. The glass lubricant of Scaife's process facilitates the hot press forming operation and permits

new die designs providing greatly improved dimensional control."

An extensive program to develop applications of the hot extrusion process to other military and commercial products is being carried out by Scaife Company anticipating similar quality improvements and cost reductions. Applications are expected to be not only to the conventional cup-shaped forgings produced by hot piercing, but also to short tube lengths and to complicated extruded shapes similar to those available in non-ferrous materials.

New Aid for Choosing Right Industrial Glove

A newly-designed industrial glove selector is now being distributed by the Surety Rubber Company of Carrollton, Ohio. It shows at a glance the correct glove for every industrial need by rating the gloves according to their resistance to various kinds of destructive elements.

The compact, pocket-size slide chart shows how each type of Surety industrial gloves stands up against more than 70 different kinds of acids, oils, solvents, chemicals, abrasives and natural elements.

ATLAS

for quality
and strength

BOLTS



NUTS



SCREWS



WASHERS



ATLAS

SCREW & SPECIALTY CO.

450 BROOME STREET, DEPT. P
NEW YORK 13, N. Y.

For More Information Circle No. 705
on Inquiry Card—Page 17

Which is the *CleCap*?



...the outsize one that nobody else makes

One of the advantages CleCap customers enjoy is the knowledge that when they want some of those BIG cap screws, the chances are 9 out of 10 we can ship them the same day.

CleCap makes 'em from $\frac{1}{4}$ " to $2\frac{1}{2}$ " diameters, any length you want—ferrous and non-ferrous—and we stock a lot of unusual sizes, nearly 10,000 different items last count.

That's another reason for dealing with *The* cap screw specialists of the country. You also get unbeatable top-quality fasteners . . . PLUS a CleCap crew that has a long-made rep for "busting a leg" to get you what you want exactly when you want it.

What happens to your profits when late deliveries hold up production lines? Put your cap screw needs up to CleCap . . . and relax!

The Cleveland Cap Screw Co.

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CLEVELAND *Top Quality* FASTENERS

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Hex Head Cap Screws—Bright and High Carbon Heat Treated Steel, Brass, Silicon Bronze, Stainless Steel; $\frac{1}{4}$ " to $2\frac{1}{2}$ " dia.

Socket Head Cap and Set Screws—Plain and Knurled $\frac{1}{4}$ " to $1\frac{1}{2}$ " dia. Also Flat and Button Head Styles.

Flat Head Cap Screws: $\frac{1}{4}$ " to 1" dia.

Fillister Head: $\frac{1}{4}$ " to $1\frac{1}{4}$ " dia.

Set Screws—Square Head: $\frac{1}{4}$ " to $1\frac{1}{2}$ " dia.

Milled Studs: $\frac{1}{4}$ " to $1\frac{1}{4}$ " dia.

Place Bolts: $\frac{1}{4}$ " to $1\frac{1}{4}$ ".

Structural Bolts to ASTM Specification A325

Tractor Bolts

Special Hot and Cold Headed Parts

Facilities to make larger diameters than listed.

Ask Your Jobber for CleCap!

Originators of the Kaufman **DOUBLE EXTRUSION** Process

For More Information Circle No. 710 on Inquiry Card—Page 17

MAY, 1954

465

Specify **UPSON-WALTON** through your Industrial Distributor

WIRE ROPE

Available in all standard sizes and constructions. Upson-Walton also supplies slings and rigging work.

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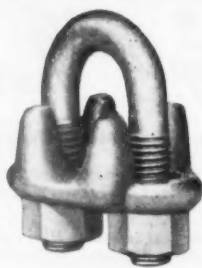


Built for safety! Working loads of this Upson-Walton wood block exceed usual working loads.



Rugged! This Upson-Walton trucking snatch block is designed for heavy-duty jobs.

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Drop-forged or malleable iron clips.



Drop-forged steel shackles—chain or anchor, screw pin or round pin.



Turnbuckles, with or without stubs, hook, eye, or jaw end fittings.

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THE UPSON-WALTON COMPANY

12500 ELMWOOD AVENUE • CLEVELAND 11, OHIO
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MANUFACTURERS OF WIRE ROPE, FITTINGS, TACKLE BLOCKS—ESTABLISHED 1871

For More Information Circle No. 711 on Inquiry Card—Page 17

Compare Machinability of Free-Cutting Brass, Leaded Steel

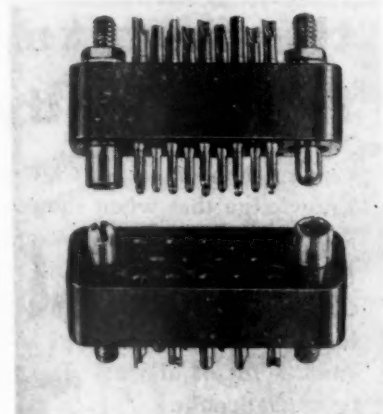
Machinability of free-cutting brass is compared with that of leaded steel in a 48-page booklet just published by Titan Metal Manufacturing Co., Bellefonte, Pa. The booklet reports results of extensive, closely-controlled research laboratory tests on the two commercial metals, as well as results of six-month production runs manufacturing booster bodies out of brass and leaded steel.

Comparison of leaded steel and free-cutting brass pieces produced in a 704-hour continuous production operation on Conomatic machines is a feature of the booklet. Also compared is wear on the cutting tools when producing leaded steel as against brass booster bodies.

The publication is titled "First Report: The Machining Characteristics of Leaded Steel and Free-Cutting Brass."

Many photographs are shown, including microstructure of brass and leaded steel.

Miniature Rectangular Connectors, 7 to 41 Contacts



A line of miniature rectangular connectors, the VT series, is designed, according to Viking Electric, 1061 Ingraham St., Los Angeles 17, Calif., for ease of assembly and disassembly and long service life. The units are available with 7, 8, 14, 18, 20, 21, 34 and 41 contacts. There is also a 25-contact unit with one high-voltage contact. Polarizing guides are optional and hoods are available for each type unit. Socket contacts are spring types which snap in and out easily without special tools. They require no "C" rings to remove and replace during disassembly. With these connectors insulating sleeving can be inserted into the insulator on the solder-pot side of both socket and pin contacts.

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... his job is to help you.



The Admiral slogan: "Your Home Deserves the Best—that's Always Admiral!" is one reason why Riverside wiring harnesses are components of Admiral home appliances.

In addition to uniform high quality, this neat "packaged wiring" is engineered for fast, accurate, easy installation. Simpler production planning, lower costs, better inventory control, and avoiding upkeep of specialized product wiring facilities and personnel are other advantages.

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For More Information Circle No. 715
on Inquiry Card—Page 17

Automation Now a Reality in Many Factories

Although the automatic factory may not yet be here, full automation is a reality in many factory operations.

That was the consensus of a panel of experts in a workshop session held March 4 at Illinois Institute of Technology, Chicago, as part of a Work Study Conference attended by engineers and executives from industry.

Panel members agreed that automation can be made to pay its way, but they added that each situation must be carefully analyzed before investments in automatic equipment are made.

Such analyses, they said, should show where the equipment will amortize itself and where it won't. They explained that a manufacturer ordinarily must take it a small step at a time, automatizing one process and then another.

The experts also agreed that the term "automation" is used differently by different people. For purposes of the workshop session, they defined it as meaning factory operations in which parts are mostly handled without human effort. Human workers do two things—they set up the machines and they maintain them.

C. F. Hautau of Hautau Engineering company, Ferndale, Mich., supplied striking examples of automation that have arrived. He described a manufacturer of coaster brakes faced with going out of business because foreign manufacturers, using cheaper labor, could undersell him. Hautau's organization was called in and was able to reduce costs to a competitive level by making the process more automatic.

"Automation can revive a dying industry," Hautau declared. "In some cases, it is the last resort."

Hautau also described a grinding machine for roller bearings that checks each piece as it is made. If it is imperfect, the machine automatically compensates. It then checks the next piece and compensates again if necessary.

"Continuous part-to-part correction of this sort is feasible in quantity production only with automatic equipment," he said. "It is the answer to the problems of many manufacturers of high-precision parts."

L. F. Hesse, Gisholt Machine company, Madison, Wis., also declared that automation is the answer in

many processes. He cautioned, however, that there still are jobs that cannot yet be taken over by automatic machines. "Everything depends on the economics of a particular job," he said.

1 1 1

New Power Drive for Hand Pipe Threader, Cutter, Reamer

There has been recently placed on the market a power drive, designed for fast, efficient operation of hand pipe threaders, cutters and reamers. The ruggedly constructed compact unit is enclosed in aluminum housing, which results in a weight reduction to 140 lb. and increases the portability. The drive converts hand tools to power in the shop or anywhere on the job. Its capacity is $\frac{1}{8}$ " to 2" pipe, $\frac{1}{4}$ " to $1\frac{1}{2}$ " bolts; with universal drive shaft, geared die stocks and cutters up to 12". The unit has a 3-jaw scroll chuck on front with 6 pinions for greater convenience, and rear chuck, universal centering. It is powered by a universal $\frac{1}{2}$ hp motor, forward and reverse, a-c or d-c. Toledo Pipe Threading Machine Co., Toledo, Ohio make it.

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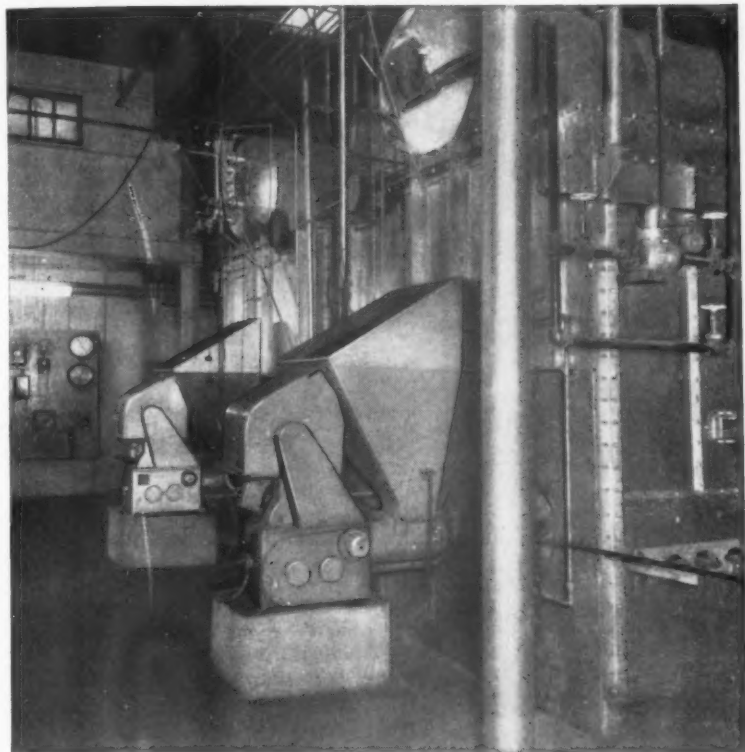
**Moen & Connell Avenues
Joliet, Illinois**



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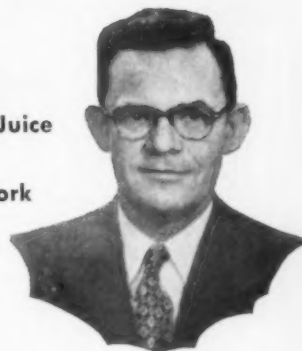
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Other fuels would cost us far more!"



says

Mr. A. J. Monta,
Plants Engineer,
The Welch Grape Juice
Company, Inc.,
Westfield, New York



"We analyzed the cost of coal and other fuels before modernizing our power plant. The result is this up-to-date coal installation that delivers steam at half the cost of competing fuels. *For economy you can't beat bituminous coal burned the modern way!*"

Modern coal-burning and handling equipment saves this plant more than 35% on labor alone! New stokers, boilers, controls and coal-handling equipment cut labor costs and save this plant 18% on fuel. The complete installation will pay for itself in about 6 years.

● Burning bituminous coal the modern way can save you money, too! Labor costs are cut to a minimum with up-to-date coal- and ash-handling equipment... modern combustion installations deliver anywhere from 10 to 40% more power from every ton of coal!

That's why, if you're planning to modernize or build a new plant, it will pay you to get the latest facts on coal. Let a consulting engineer show you how a modern coal installation designed to meet your specific needs can save you real money.

Here's something more! Today's bituminous coal customers get a better-prepared product—designed to meet their special requirements. And bituminous coal offers future dependability no other fuel can match. Reserves are virtually inexhaustible, and America's coal industry is the world's most efficient—your assurance of dependable supply of coal at relatively stable prices for years to come.

If you operate a steam plant, you can't afford to ignore these facts!

COAL in most places is today's lowest-cost fuel.

COAL resources in America are adequate for all needs—for hundreds of years to come.

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COAL is the fuel that industry counts on more and more—for with modern combustion and handling equipment, the inherent advantages of well-prepared coal net even bigger savings.

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A Department of National Coal Association, Washington, D. C.

FOR HIGH EFFICIENCY  FOR LOW COST
YOU CAN COUNT ON COAL!

For More Information Circle No. 716 on Inquiry Card—Page 17

ANOTHER PROBLEM SOLVED by *Tubular Rivet*

RE: A COST REDUCTION AND QUALITY PROBLEM

problem

Trombone TV Antennas --
Production required 4,000 per day
necessitating two shifts of 12
operators each when using bolts, spring
washers and nuts, which were unsatis-
factory due to cost and trouble with
loosening assemblies.

solution

Assembly redesigned for use of Tubu-
lar Rivets.
Above production maintained using two
operators and one Automatic Feed
Machine.

P.S.

SAVING—\$400.00 per day with improved
product owing to elimination of
loosening nuts. What's your problem?
No obligation, naturally.

Tubular Rivet

E. STOD COMPANY

WOLLASTON 70, MASSACHUSETTS

BRANCH OFFICES: Buffalo, Chicago, Detroit, Indianapolis,
Los Angeles, Nashville, New York City, Philadelphia, San Francisco, St. Louis

For More Information Circle No. 717 on Inquiry Card—Page 17

Self-Extinguishing Resin for Use in Translucent Panels

American Cyanamid Company has announced the development of a new polyester resin, Laminac 4147, which for the first time permits the fabrication of translucent panels having both light stability and self-extinguishing properties.

Formerly, light-stabilized panels made of polyester resin and glass fibers would continue to burn after the source of flame was removed. Panels made with the new Laminac 4147 are self-extinguishing after the flame has been removed. This self-extinguishing property is maintained even after long exposure at 150 degrees F.

Previously, the only way to achieve self-extinguishing properties in reinforced plastic panels was to add to the resin a combination of a chlorine-containing compound and a material such as antimony oxide. However, use of these compounds caused the panels to discolor very rapidly. Self-extinguishing properties are not permanent with this system and this particular property decreased with storage.

Laminac 4147 is a styrene-base polyester resin and can be used in much the same manner as the typical non-self-extinguishing resins. Physical properties of the cured resin are comparable with standard polyester resins.

New Lightweight Aluminum Industrial Roofing Offered

In answer to the growing demand in industry for a maintenance-free metal roofing material of thinner gauge, Aluminum Company of America is enlarging its line of industrial roofing materials with the addition of a new, lightweight corrugated aluminum sheet. Made of the same durable high-strength alloy as the standard .032 in. material, the new Alcoa Aluminum Corrugated Industrial Roofing and Siding product is only .024 in. thick.

This lightweight product will fill the need where narrow spans in the roof support structure do not require the extra high beam strength of the .032 in. material. An added advantage of the new roofing material is its low cost.

Alcoa Industrial Roofing is now more readily available with the improving supply of aluminum. In spite of metal shortages, a considerable amount of service data has been

(Please turn to page 474)

NOW INDUSTRIAL REX-FLEX Heavy Wall Stainless Steel HOSE

Available in four types to meet every industrial need

TYPE RF-44—Annularly corrugated; sizes from 2½" through 6" I.D. for working pressures to 40 psi.

TYPE RF-45—Same as Type RF-44, but with metal braid covering for working pressures to 410 psi.

TYPE RF-54—Helically corrugated; sizes from ¼" through 2", I.D. for working pressures to 440 psi.

TYPE RF-55—Same as Type RF-54, but with metal braid covering for working pressures to 3100 psi.

To meet the growing demand for heavy duty stainless steel hose, Flexonics Corporation now offers new heavy wall Industrial REX-FLEX. Backed by unmatched experience in the manufacture of corrugated stainless steel, steel and bronze hose, the new Industrial REX-FLEX marks an important step forward in the development of corrosion-resistant hose that can stand the gaff of rugged industrial service, and still maintain maximum flexibility.

A complete range of flanged or screwed fittings may be used, attachment being made by silver brazing or atomic hydrogen welding.

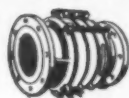
See your industrial distributor, or write for data sheets giving full specifications on Industrial REX-FLEX.

Flexonics Corporation

Flexon identifies products of Flexonics Corporation that have served industry for over 52 years.



Flexible metal hose



Expansion joints

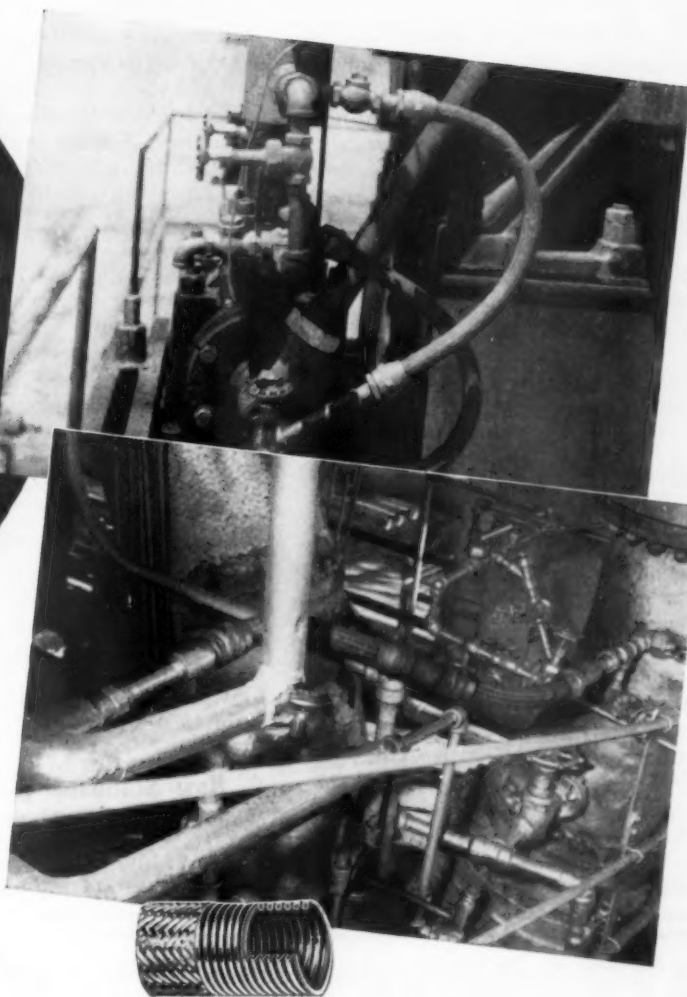
Aircraft components



Metallic bellows



For More Information Circle No. 718 on Inquiry Card—Page 17



TYPICAL APPLICATIONS FOR INDUSTRIAL REX-FLEX

- ✓ Weigh tank connections
- ✓ Superheated steam
- ✓ Conveying corrosive gases and liquids
- ✓ High temperature connections
- ✓ Vibration connections
- ✓ Vacuum hose
- ✓ Fireproof connections
- ✓ Conduit
- ✓ Offset motions
- ✓ Continuous flexations
- ✓ Air ducts
- ✓ Exhaust connections, etc.

WRITE FOR CATALOG

Industrial REX-FLEX is part of Flexonics' complete line of flexible metal hose. All types are described in Catalog 130-R. Or see the Flexonics' catalogs in Sweets, Chemical Engineering Catalog or Refinery Catalog.



CHICAGO METAL HOSE DIVISION

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FORMERLY CHICAGO METAL HOSE CORPORATION

In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

(Continued from page 472)

compiled on Alcoa roofing in various industrial applications. Installations have weathered corrosive atmospheres in excess of 20 years with only negligible damage. Maintenance costs on this roofing remain close to zero. Painting is not required.

The new .024 in. Alcoa Industrial Roofing sheet is supplied with corrugations $\frac{7}{8}$ in. deep and a 2.67 in. pitch identical to the .032 in. standard product. Design loads, and weight and coverage tables, are shown below.

Reports 16% Increase in Output Per Man-Hour, 1947-1951

Output per man-hour in the median American industry increased 16 per cent between 1947 and 1951.

This was announced by Leon Greenburg, chief of the productivity division of the U. S. Bureau of Labor Statistics, who spoke at a Work Study conference at Illinois Institute of Technology in Chicago.

The median productivity gain of 16 per cent during the postwar period is a preliminary, unofficial figure, Greenburg said. The final figure may be affected by industries

which show a very high rate of increase or decrease.

Indications are that a number of industries will show productivity increases of more than 50 per cent, he said. He did not name any specific industries in this group.

Soviet Productivity High

Comparing U. S. and Russian productivity, Greenburg said that Russia's output increased 13 per cent per year from 1946 to 1950, according to U. S. S. R. statistics. By 1952, however, it had declined to 6 per cent.

"Even though these figures are possibly exaggerated," Greenburg said, "there is ample evidence that Russia has been expanding its factories and capital equipment. According to one expert, Soviet industrial output will increase 8 per cent annually with the result that by 1970 productivity there will be four and one-half times as great as in 1950."

New Standard Color Code Promotes Safety on the Job

Safety for the man on the job is the purpose of the new American

Standard Color Code, just revised and released to industry.

The American Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment is the revision of a war standard. It uses three new colors needed to warn workers against potential dangers.

The recently-born radiation perils will be announced by high-visibility purple. This color was adopted into the Code from the Atomic Energy Commission, who employs the color in a broken-propeller-shaped symbol. The code suggests that purple be used in rooms and areas, indoors and outdoors, where radioactive materials are stored or handled. Burial grounds for this material and contaminated equipment are also marked by this color.

Two other colors added to the revised code are: Orange, will be used to designate dangerous parts of machines or energized equipment that may cut, mangle or otherwise injure, and to emphasize dangers from exposed or unguarded parts of machines. Blue, long used as a signal by railroads, will warn employees not to attempt to operate machines while down or under repair.

"PURCHASING AGENTS ARE SCEPTICS . . . they'll not believe the truth about MICRONOIL GAGE-LUBE" . . . said my wife.

Here is a gage lubricant—'uncanny' say users, now in its 11th year of unprecedented service to precision parts producers . . . offering economies that should fascinate any Purchasing Agent.

THE RECORD, involving over 700 of the nation's leading firms in precision production! USE-life of precision gages increased by 500% to 3600%! ONE ounce saved one user \$1900.00! TWO ounces saved another user \$1000.00!

We guarantee to DOUBLE the use-life of the most expensive precision gages. You may expect several other money-saving attributes in MICRONOIL GAGE-LUBE.

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H. TOM COLLORD, President

PROTECTIVE COATINGS, INC.

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Detroit 27, Michigan

For More Information Circle No. 719 on Inquiry Card—Page 17

No weak spots

No rough edges

SELEKUT
Genuine
SOAPSTONE
CRAYONS

The finest metal workers' crayon you can buy. Rigidly selected, first-grade soapstone insures uniformly smooth crayons.

Send for FREE Metal Workers' Crayon Folder giving sizes, packing, weight and prices of soapstone and composition crayons. Also illustrated Marking Crayon price book sheet. Address Dept. TP-5

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For More Information Circle No. 720 on Inquiry Card—Page 17

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THESE FEATURES -**

- Knit-wrist Style
- Natural Rubber Coated
- Palm with
- Anti-Slip Finish
- Ventilated Back
- Standard Weight
- Flexible — Comfortable

HOOD

Model R-45

Also available as R-46, fully coated with natural rubber.

Hood Rubber Company makes a complete line of rubber and plastic gloves for industrial uses. Write today for illustrated catalog featuring Hood Glove Guide — "How to choose the RIGHT glove for EACH job".



HOOD RUBBER CO., Watertown, Mass.

For More Information Circle No. 736 on Inquiry Card—Page 17

Quick Prices... Quality Production Prompt Delivery for Every Need!

Complete facilities, including a fully-equipped shop to make necessary tools and dies, are at your service to produce the finest plates of every type:

Name Plates	Data Plates
Signs	Instruction Plates
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Any Process... Any Metal... Any Colors
Decorative Bezels, Escutcheons, Intricate Formings

You are invited to take advantage of the skill of our designers without obligation. Send for free booklet showing Mayer's unsurpassed facilities for serving you!

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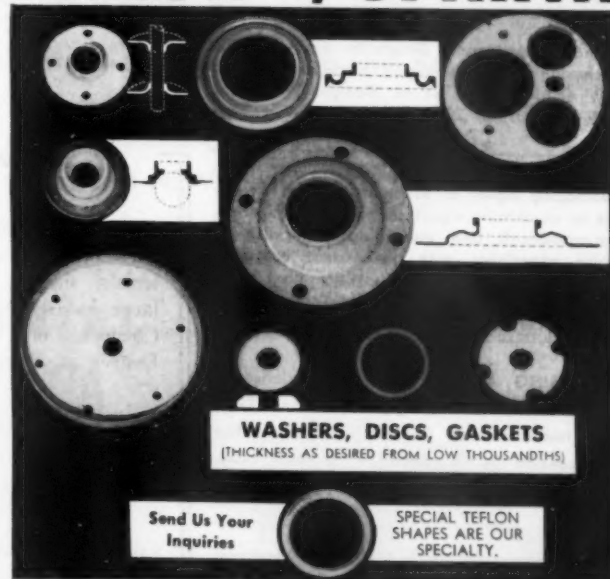
Add Fame to Your Name
with **NAME PLATES** by

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For More Information Circle No. 737 on Inquiry Card—Page 17

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WASHERS, DISCS, GASKETS
(THICKNESS AS DESIRED FROM LOW THOUSANDTHS)

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SPECIAL TEFLON
SHAPES ARE OUR
SPECIALTY.

If you have a problem concerning sealing, non-friction, non-adhesion, chemical inertness, temperature, electrical or other... that one or more of the remarkable combinations of properties of TEFLON can help you solve, let us try to help.

SPARTA MANUFACTURING
Company • EAST SPARTA, OHIO

For More Information Circle No. 738 on Inquiry Card—Page 17

See \$10 Million Savings From New Standard for Transformers

More than \$10,000,000 in savings will be effected by a new American Standard in the next three years. Steel mills, automobile manufacturers, electrical utilities, railroads, public works and hundreds of industrial companies will benefit.

The American Standard Requirements for Transformers, C57.12a-1954, will enable users to buy standard from designs already available, weighing as much as 30 tons and costing up to \$45,000 or more each. Manufacturers estimate that more than \$100,000,000 in transformers of

ratings covered by the standard will be sold in the next three years.

"On transformers covered by this standard, users will no longer have to pay up to \$5,000 more for specially built units," says H. M. Jalonack, General Electric Company. Mr. Jalonack is chairman of the Subcommittee on Power and Distribution Transformers of the ASA Committee on Transformers, C57.

"This standard means that such transformers will become assembly-line products—another major advance in the electrical industry's progress," he added.

The American Standard applies to

transformers of 67,000 volts and below. The ratings covered are 501 through 10,000 kva, 3 phase; and 501 through 5,000 kva, 1 phase.

The standardization of bushings, long-called "impractical" by many engineers and manufacturers, has been accomplished in this standard. Technical experts who developed the standard pointed out the savings in dollars and headaches this particular feature of the standard will bring about.

Mr. Jalonack emphasized that the specifications provide for transformers to embody the features needed and desired by most users.

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Positions Wanted	45¢ line
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Undisplayed (want-ad style), minimum charge 4 lines, prepaid. Figure forty-four letter spaces (five average words) to a line. Add one line for box number address; replies forwarded without charge. Discount of 10% for twelve consecutive displayed insertions. Forms close 15th of month preceding date of publication.

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Positions Wanted

Purchasing Manager. Graduate engineer with purchasing and engineering background, presently employed, wishes to change. Write Box 1411, Purchasing, 205 E. 42nd St., New York

"Purchasing Agent or assistant—4 years experience as purchasing agent of industrial chemicals, pharmaceuticals and packaging materials. Extensive experience with government contracts, bids and cost calculations." Write Box 1412, Purchasing, 205 E. 42nd St., New York

PURCHASING AGENT. 10 yrs. experience in volume—diversified buying. Key man, Plant Engr., Industrial and Constr. bkgd. Seeks top level position N. Y. Area. Write Box 1406, Purchasing, 205 E. 42nd St., New York, N. Y.

Do you use more than 200 lbs. of wiping rags a year? Do you rent industrial towels for 1½ to 3¢ each plus replacement costs?

Then change to 17¢ per lb. GREASE CHAMP . . . it costs slightly more than 1¢ for a cloth twice the size of an industrial towel.

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Exceptional opportunity for man experienced in procurement of raw materials, supplies and equipment for large industrial plant, preferably in Chemical or Metallurgical fields. Degree in Engineering helpful.

Successful applicant will be moved to Cincinnati area at Company's expense.

Company offers outstanding program of benefits for employees. Also opportunities for advancement.

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Position Wanted

Industrial Purchasing Agent seeking position with greater advancement possibilities. Young, married, veteran, and willing to relocate anywhere. Three years experience purchasing packaging, printing, office equipment and supplies, maintenance supplies for large Direct Mail selling organization. Also 2½ years experience as supervisor of large shipping department for same organization. Write Box 1410, Purchasing, 205 East 42nd St., New York 17, N. Y.



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RAINBOW'S NEW SAFETY ASHTRAY
"YOUR OWN"

ADVERTISING ASHTRAYS

in fine clear crystal glass. New smart model, with separate rests for cigars and cigarettes.

INEXPENSIVE

long lasting Good-Will Builder!

ONLY 16½¢

1,000 pc. \$165. 500 pc. \$97.50

Large quantities, special prices.

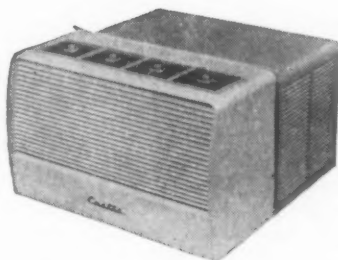
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Your name, trademark, etc., imprinted in color and permanently FUSED INTO THE GLASS.

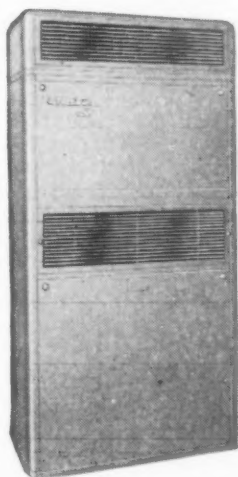
RAINBOW ART CO.

Dept. P-5

Huntington, W. Va.



NEW Attractive Window Units in 3 models.
for commercial and residential use



Package Units—2, 3, 5, 7½ and 10 tons.
Choice of Open or Semi-hermetic
Compressors... and 15 ton packaged
central type units.

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The Curtis line is precision-built to assure a long life of trouble-free service. You can specify Curtis air conditioning equipment with the assurance that it will never let you down.

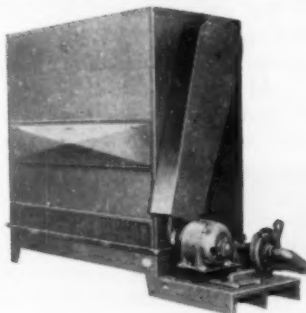
- ✓ Installation is fast and easy.
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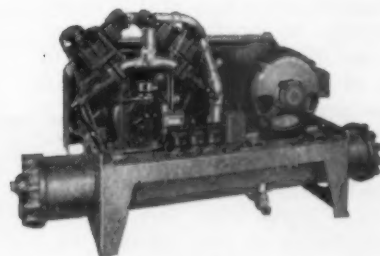
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Residential Cooling and Heating Units



Air handling units, cooling towers,
and evaporative condensers



Water Cooled Condensing Units—
through 80 tons

Curtis

REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company
1908 Kienlen Avenue, St. Louis 20, Missouri

For More Information Circle No. 739 on Inquiry Card—Page 17

LETTERS . . .

ADVICE WANTED

Do you have references or descriptive literature on any existing system of inter-plant exchange of information as to inventories common to two or more plants of a company?

Specifically, our company has two plants which are almost identical in nature of operations and type and manufacture of equipment. Consequently, inventories are usable by both plants. My problem is to devise a system whereby up-to-date inventory-on-hand information on spare parts common to both plants and stocked at both plants can be made readily available at the two separate locations.

H. R. Hope, Plant Buyer
Solvay Process Division
Moundville, W. Va.

● We do not have in our files any examples of systems for inter-plant exchange of inventory information other than the reporting of items which have become obsolete or surplus at one location and are thus eligible for transfer. This, of course, does not apply to items that are currently stocked and used at both plants.

If the buying for both plants is done through one office, it should be relatively simple to maintain a current inventory record of specific items at each location, through copies of stockroom requisitions or a daily recap sheet which could be posted to the purchase records. If the number of items concerned is not large, a printed or duplicated form could be prepared listing these items so that they could be checked off with a minimum of clerical work, and list exchanged weekly or on any other appropriate time schedule.

Since the objective in this case is apparently to operate both plants with one minimum reserve stock instead of two, it might be possible to designate one of the plants as the purchasing and stocking location for spare parts in common use and to have the other plant requisition such parts from this stock as needed, being in the position of a plant department in this respect, and maintaining only the equivalent of a departmental tool crib inventory as its own reserve. The practicability of such a plan would depend largely on the physical location of the two plants in relation to each other.

Some central buying and stores control would seem to be essential in making any plan workable without a duplication of stores records that might defeat its own purpose.

If any of our readers have had experience with this particular problem, their advice would be most helpful.—Ed.

PAYMENT OF INVOICES

We are starting an analysis of our Accounts Payable Department procedures. We are interested in the possibilities of cycle payment of our vendor invoices, such as paying a specific vendor for all his invoices on hand as of a specific date each month. We would appreciate any information as to companies that may be utilizing a similar plan."

Bruce A. Demers
Owens-Illinois Glass Co.
Toledo, Ohio

● Establishment of specific payment dates and cumulative payment of specific vendors' invoices are fairly common practice in companies where the number of accounts payable is large. While we have no actual statistics on the subject, it is our observation that the usual practice is a twice-a-month payment schedule. For example, all invoices received from the 1st through the 15th of the month will be paid on the 20th, and invoices received from the 16th to the end of the month will be paid on the 5th of the succeeding month.

The chief problem likely to be encountered is that of cash discounts, as where terms are 2% 10 days, 30 days net. Obviously, some of the payments under such a system would run over the 10 day period, and the discount privilege would be forfeited. However, arrangements can usually be made with vendors, if the system is understood and their permission is given, to retain the discount privilege while maintaining such a schedule of payments. It would be pointed out, of course, that the average time lapse from receipt of invoice to payment date under this schedule is only 13 days, and that on a substantial number of invoices arriving toward the middle or end of the month, payment would anticipate the discount date by as much as 5 days, so that it practically averages out. It is good policy to

apprise vendors of the payment schedule in any case, to avoid misunderstandings and to obviate the need of 1st of the month statements.

UNPRICED PURCHASE ORDERS

At the present time we are involved in the reorganization of our Purchasing Division, and there is one point on which we do not agree. We would appreciate any assistance you may be able to furnish us in arriving at the correct solution to our problem.

Heretofore, we did not indicate prices on our purchase orders. The Purchasing Agent was responsible to the extent that he was required to OK all invoices for payment. The alternate theory is to price purchase orders, thereby eliminating the necessity of the Purchasing Agent's OK on bills for payment. The order clerk can process said bills when received if they are priced in accordance with the purchase order.

J. C. Goepfert, Pur. Agt.
A. Hollander & Son, Inc.
Newark, N. J.

● It is generally considered good purchasing practice to have all purchase orders priced when issued. This is not primarily on account of the later processing of invoices as received, but because the price is one of the important terms of any purchase agreement. The purchase order is actually incomplete without a specified price, and is somewhat like a blank check unless the buyer's obligation is clearly set forth. The principle involved is that the purchasing agent should know the full terms of the purchase at the time the order is issued, rather than being in the position of judging whether the price is reasonable and right after the goods have been shipped and invoiced.

This does not necessarily mean that quotations or bids must be received on every order, since many orders are priced from published lists or quotations on file in the purchasing office, or on the basis of price on the previous order unless some change has been indicated and agreed to. There are, of course, some cases of emergency orders where time does not permit securing a firm price, but these should be the exception rather than the rule.